

Sefram
Sefram

Product guide Information

2007

60th
ANNIVERSARY
1947-2007



BK PRECISION
ELECTRONIC TEST INSTRUMENTS

Sefram
INSTRUMENTS & SYSTEMES



SEFRAM is celebrating its 60th anniversary this year.

In 1947 SEFRAM started with the design and production of oscillographic recorders. 60 years on, SEFRAM has become European leader for recorders & data acquisition systems, is a major manufacturer of TV field strength meters and now offers an extensive range of test & measurement instruments.

Today, SEFRAM is one of the globally recognised instrument manufacturers.

Our main strengths are:

- Technical innovation and service in response to customer requests
- All our activities are integrated into one modern 4000m² plant in Saint-Etienne
- ISO9001:2000 quality accreditation

SEFRAM has reached its 60th anniversary due to the ongoing support of our many customers and partners throughout the world.

We would like to thank you all for your confidence in SEFRAM.

Pascal OSES
General Manager – Executive VP

Roger Marenthier
Sales and Marketing Director



1947 - 2007 60 years of innovation and service

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COMPACT AND RELIABLE HANDHELD DMMS

The Sefram 7307, 7309 are designed for technicians looking for compact pocket multimeters that perform standard DMM functions. Compact and rugged, they are great for one-handed operation.



Technical Specification	SEFRAM 7307	SEFRAM 7309
VDC	200mV to 600 V	200mV to 600 V
Basic accuracy*	$\pm (0,5\% + 2d)$	$\pm (0,5\% + 2d)$
VAC	2V à 600V	2V à 600V
Basic accuracy*	$\pm (1,5\% + 2d)$	$\pm (1,5\% + 5d)$
IDC	-	2A, 10A
Basic accuracy*	-	$\pm (1.0\% + 3d)$
IAC	-	2A, 10A
Basic accuracy*	-	$\pm (1.5\% + 5d)$
Resistance	200 Ω to 20 M Ω	200 Ω to 20M Ω
Accuracy*	$\pm (0,7\% + 2d)$	$\pm (0,7\% + 3d)$
Continuity / buzzer	yes	yes
Capacitance	-	2nF ~ 2mF
Diode test	yes	yes
Frequency	-	2000Hz to 20MHz
Temperature	-	-20°C to 800°C
Non contact voltage	yes	yes
GENERAL SPECIFICATION		
Display	2000 cts	2000 cts
Power supply	2x1,5 V (LR03)	2 x 1,5 V (LR03)
Auto power off	-	-
IEC 1010	600V CAT III	600 V CAT III
Dimensions	82 x 164 x 44 mm	80 x 165 x 36 mm
Weight	250g	250 g

Capabilities

- 2000 counts display
- Hold function
- Diode and continuity test with buzzer
- Non contact voltage detector
- IEC 1010 : 600 V CAT III



SUPPLIED WITH : a test leads set, batteries.

Optional accessories : see page 54, 55, 56, 57



Technical Specification	SEFRAM 7317	SEFRAM 7318
VDC	600 mV to 1000 V (5 cal)	600 mV to 1000 V (5 cal)
Accuracy	$\pm (0,5\% + 2d)$	$\pm (0,5\% + 2d)$
VAC	600 mV to 750 V (5 cal)	600 mV to 750 V (5 cal)
Accuracy	$\pm (0,9\% + 2d)$	$\pm (0,9\% + 2d)$
IDC	600 μ A, 6000 μ A	600 μ A to 10 A (4 cal)
Accuracy	$\pm (1,0\% + 2d)$	$\pm (1,0\% + 2d)$
IAC	600 μ A, 6000 μ A	6A to 10 A
Accuracy	$\pm (1,5\% + 5d)$	$\pm (1,5\% + 5d)$
Resistance	600 Ω to 60 M Ω	600 Ω to 60 M Ω
Accuracy	$\pm (0,7\% + 2d)$	$\pm (0,7\% + 2d)$
Capacitance	6 nF to 6 mF	6 nF to 6 mF
Accuracy	$\pm (1,9\% + 8d)$	$\pm (1,9\% + 8d)$
Frequency	6000 Hz to 60 MHz (5 cal)	6000 Hz to 60 MHz (5 cal)
Accuracy	$\pm (0,01\% + 1d)$	$\pm (0,01\% + 1d)$
Continuity / buzzer	yes	yes
Diode test	yes	yes
GENERAL SPECIFICATION		
Display	6000 cts	6000 cts
Power supply	pile 9V	pile 9V
Dimensions	82 x 164 x 44 mm,	82 x 164 x 44 mm,
Weight	400g	420 g
IEC 1010	600 V CAT IV	600 V CAT IV

Capabilities

- 6000 counts display
- Frequency and capacitance measurements
- Hold function
- Protective holster
- IEC 1010 : 600V CAT IV



SUPPLIED WITH : a test leads set, batteries, a protective holster.



* All accuracies are basic accuracy



SEFRAM 7322



SEFRAM 7323



SEFRAM 7324



Capabilities

- 4000 counts display with bargraph
- TRMS measurements for (SEFRAM 7323 and 7324)
- Frequency measurements
- Protective holster
- RS-232 Interface (SEFRAM 7324)
- IEC 1010 : 600 V CAT IV

Technical Specification	SEFRAM 7322	SEFRAM 7323	SEFRAM 7324
VDC	400 mV to 1000 V (5 cal)	400 mV to 1000 V (5 cal)	400 mV to 1000 V (5 cal)
Basic accuracy	$\pm (0,5\% + 2d)$	$\pm (0,5\% + 2d)$	$\pm (0,5\% + 2d)$
VAC	400 mV to 750 V (5 cal)	400 mV to 750 V (5 cal)	400 mV to 750 V (5 cal)
Basic accuracy	$\pm (0,9\% + 2d)$	$\pm (0,9\% + 2d)$	$\pm (0,9\% + 2d)$
IDC	400 μ A, 4000 μ A	400 μ A to 10 A (4 cal)	400 μ A to 10 A (4 cal)
Basic accuracy	$\pm (1,0\% + 2d)$	$\pm (1,0\% + 2d)$	$\pm (1,0\% + 2d)$
IAC	400 μ A, 6000 μ A	400 μ A to 10 A (4 cal)	400 μ A to 10 A (4 cal)
Basic accuracy	$\pm (1,5\% + 5d)$	$\pm (1,5\% + 5d)$	$\pm (1,5\% + 5d)$
Resistance	400 Ω to 40 M Ω	400 Ω to 40 M Ω	400 Ω to 40 M Ω
Basic accuracy	$\pm (0,7\% + 2d)$	$\pm (0,7\% + 2d)$	$\pm (0,7\% + 2d)$
Capacitance	4 nF to 4 mF	4 nF to 4 mF	4 nF to 4 mF
Basic accuracy	$\pm (1,9\% + 8d)$	$\pm (1,9\% + 8d)$	$\pm (1,9\% + 8d)$
Frequency	4 Hz to 40 MHz (5 cal)	4 Hz to 40 MHz (5 cal)	4 Hz to 40 MHz (5 cal)
Basic accuracy	$\pm (0,01\% + 1d)$	$\pm (0,01\% + 1d)$	$\pm (0,01\% + 1d)$
Continuity test	yes	yes	yes
Diode test	yes	yes	yes
RS-232 interface	-	-	yes

GENERAL SPECIFICATION

Display	4000 cts (avec bargraph)	4000 cts (avec bargraph)	4000 cts (avec bargraph)
Power supply	battery 9V	battery 9V	battery 9V
Dimensions, weight	82 x 164 x 44 mm, 400g	82 x 164 x 44 mm, 400g	82 x 164 x 44 mm, 400g
IEC 1010	600 V CAT IV	600 V CAT IV	600 V CAT IV

SUPPLIED WITH : a test leads set, batteries, a protective holster.

Optional accessories : see page 54, 55, 56, 57



SEFRAM 7332



SEFRAM 7333

Capabilities

- 3400 to 4000 counts display
- Large display with bargraph
- Frequency measurements
- Capacitance measurements
- Temperature measurement for 7333 only.
- Peak and Min/Max measurements for 7333 only.
- Backlight Sefram 7333 only.
- IEC 1010 : 600V CAT III



Technical Specification	SEFRAM 7332	SEFRAM 7333
VDC	400 mV to 1000 V (5 cal.)	400 mV to 1000 V (5 cal.)
Basic accuracy	$\pm (0,25\% + 1d)$	$\pm (0,25\% + 1d)$
VAC	400 mV to 750 V (5 cal.)	400 mV to 750 V (5 cal.)
Basic accuracy	$\pm (1,3\% + 5d)$	$\pm (1,3\% + 5d)$
IDC	40 mA to 10 A (3 cal.)	40 mA to 10 A (3 cal.)
Basic accuracy	$\pm (0,6\% + 2d)$	$\pm (0,6\% + 2d)$
IAC	40 mA to 10 A (3 cal.)	40 mA to 10 A (3 cal.)
Basic accuracy	$\pm (2\% + 5d)$	$\pm (2\% + 5d)$
Resistance	400 Ω to 40 M Ω (6 cal.)	400 Ω to 40 M Ω (6 cal.)
Basic accuracy	$\pm (0,4\% + 3d)$	$\pm (0,4\% + 3d)$
Capacitance	4 nF to 40 mF (8 cal.)	4 nF to 40 mF (8 cal.)
Basic accuracy	$\pm (2\% + 8d)$	$\pm (2\% + 8d)$
Frequency	4 kHz to 40 MHz	4 kHz to 40 MHz
Basic accuracy	$\pm (0,01\% + 1d)$	$\pm (0,01\% + 1d)$
Continuity test	yes	yes
Diode test	yes	yes
Temperature	-	- 20°C to 800°C

GENERAL SPECIFICATION

Display	4000 cts (bargraph : 65 seg.)	4000 cts (bargraph : 65 seg.)
Power supply	1 x 9 V (6F22)	1 x 9 V (6F22)
Dimensions, weight	94 x 188 x 40 mm, 440 g	94 x 188 x 40 mm, 440 g
IEC 1010	600 V CAT III	600 V CAT III

SUPPLIED WITH : a test leads set, batteries, a protective holster, batteries.

Only for Sefram 7333 : thermocouple adapter (ST306) and K probes (ST 305)

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

SEFRAM 7332V-7333V

Model supplied with a carrying case (SC601).

* All accuracies are basic accuracy

DMMs for Electronic applications

Technical Specification	BK 2405A	BK 2407A	BK 2408
VDC	2 V to 600 V (4 rges)	320 mV to 600 V (5 rges)	200 mV to 600 V (4 rges)
Accuracy*	± (2% + 1d)	± (1,2% + 1d)	± (1,2% + 1d)
VAC	200 V à 600 V (2 rges)	3,2 V à 600 V (4 rges)	200mV à 600 V (4 rges)
Accuracy*	± (2,9% + 4d)	± (1,5% + 4d)	± (2% + 1 d)
IDC	200 µA to 10 A (5 rges)	320 µA to 10 A (5 rges)	2 mA to 10 A (4 rges)
Accuracy*	± (3% + 1d)	± (2% + 4d)	± (1,5% + 1d)
IAC	-	320 µA to 10 A (5 rges)	200 µA to 10 A (4 rges)
Accuracy*	-	± (2,5% + 4d)	± (2% + 4d)
Resistance	200 Ω à 20 MΩ (5 rges)	320 Ω à 31 MΩ (6 rges)	200 Ω à 20MΩ (4 rges)
Accuracy*	± (2% + 3d)	± (1% + 3d)	± (1,5% + 4d)
Continuity test	-	< 320 Ω	< 100 Ω
Diode test	yes	yes	yes
Non contact voltage indicator	-	-	yes (> 70 VAC)
GENERAL SPECIFICATION			
Display	2000 cts	3200 cts	2000 cts
Bargraph	-	32 seg.	-
Power supply	battery 9V	battery 9V	battery 9V
Dimensions, weight	143 x 68 x 47 mm, 206g	143 x 68 x 47 mm, 206g	143 x 68 x 47 mm, 206g
IEC 1010	600 V CAT III	600 V CAT III	600 V CAT III

SUPPLIED WITH : a test leads set, and one battery.

OPTIONAL ACCESSORIES: SEE PAGE



BK 2405A



BK 2407A

BK 2408

Capabilities

- Large Display
- Non contact voltage indicator from 70VAC for model BK2408 only.



BK 2703B



BK 2704B



BK 2706A



BK 2707A

Technical Specification	BK 2703B	BK 2704B	BK 2706A	BK 2707A
VDC	200 mV to 1000 V (5 rges)	200 mV to 1000 V (5 rges)	200 mV to 1000 V (5 rges)	200 mV to 1000 V (5 rges)
Accuracy*	± (0,5% + 1d)	± (0,5% + 1d)	± (0,5% + 1d)	± (0,5% + 1d)
VAC	200 V to 750 V (5 rges)	200 mV to 750 V (5 rges)	200 mV to 750 V (5 rges)	200 mV to 750 V (5 rges)
Accuracy*	± (1,5% + 4d)	± (1,5% + 4d)	± (1,5% + 4d)	± (1,5% + 4d)
IDC	200 mA to 10 A (4 rges)	200mA to 10A (4 rges.)	200µA to 10 A(6 rges.with 2 A)	200µA to 10 A(5rges.)
Accuracy*	± (1% + 1d)	± (1% + 1d)	± (1% + 1d)	± (1% + 1d)
IAC	-	200µA to 10 A(5 rges.)	200µA to 2 A(6 rges.dont 2 A)	200µA to 10 A(5 rges.)
Accuracy*	-	± (1,2%+4d)	± (1,2%+4d)	± (1,2% + 4d)
Resistance	200 Ω to 20MΩ	200 Ω to 20 MΩ	200 Ω to 20 MΩ	200 Ω to 200 MΩ
Accuracy*	± (0,8% + 1d)	± (0,8% + 1d)	± (0,8% + 1d)	± (0,8% + 1d)
Capacitance	-	2 pF à 20 µF (5 rges.)	2 pF à 20 µF (5 rges.)	2 pF à 20 µF (5 rges.)
Accuracy*	-	± (3% + 10d)	± (3% + 10d)	± (3% + 10d)
Frequency	-	2 KHz to 15 MHz (5 rges.)	2 KHz to 15 MHz (5 rges.)	2 KHz to 15 MHz (5 rges.)
Accuracy*	-	± (0,5% + 2d)	± (0,5% + 2d)	± (0,5% + 2d)
Transistor tester	-	Base current (Ib) : 10µV. Vce: 2,8V. Gain Indication : 0 to 1		
Temperature	-	-	- 20°C to 750°C	-
Accuracy*	-	-	± (2% + 2°C)	-
Logical test	-	-	-	-
Min pulse width	-	-	-	-
Continuity test	yes	yes	yes	yes
Diode test	yes	yes	yes	yes
GENERAL SPECIFICATION				
Display	2000 cts	2000 cts	2000 cts	2000 cts
Power supply	battery 9 V	battery 9 V	battery 9 V	battery 9 V
Dimensions, weight	150 x 79 x 33 mm, 250 g	150 x 79 x 33 mm, 250 g	150 x 79 x 33 mm, 250 g	150 x 79 x 33 mm, 250 g
IEC 1010	600 V CAT II	600 V CAT II	600 V CAT II	600 V CAT II

SUPPLIED WITH : a test leads set, batteries, a protective holster. Only for BK 2706A a K probe.

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy



BK 388B



BK 389A



BK 390A



BK 391A

Capabilities

- 20 000 counts display only BK391A
- Frequency and capacitance measurement
- Transistor test
- Logic Probe
- RS-232 Interface for (BK390A)



Technical Specification	BK 388B	BK 389A	BK 390A	BK 391A
VDC	400 mV to 1000 V (5 rges.)	200 mV to 1000 V (5 rges.)	200 mV to 1000 V (5 rges.)	200 mV to 1000 V (5 rges.)
Accuracy*	$\pm (0,5\% + 1d)$	$\pm (0,25\% + 1d)$	$\pm (0,1\% + 2 d)$	$\pm (0,05\% + 1d)$
VAC	400 mV to 750 V (5rges.)	400 mV to 750 V (5rges.)	400 mV to 750 V (5rges.)	200 mV to 750 V (5 rges.)
Accuracy*	$\pm (1,2\% + 4d)$	$\pm (1,2\% + 5d)$	$\pm (1,2\% + 5d)$	$\pm (1\% + 10d)$
IDC	400 mA to 20 A (6 rges.)	400 μ A to 20 A (5 rges.)	400 μ A to 20 A (5 rges.)	200 μ A to 20 A (5 rges.)
Accuracy*	$\pm (1\% + 1d)$	$\pm (1\% + 1d)$	$\pm (1\% + 1d)$	$\pm (0,5\% + 5 d)$
IAC	400 mA to 20 A (6 rges.)	400 μ A to 20 A (5 rges)	400 μ A to 20 A (5 rges)	200 μ A to 20 A (5 rges)
Accuracy*	$\pm (1,5\% + 1d)$	$\pm (1,5\% + 4d)$	$\pm (1,5\% + 4d)$	$\pm (1,2\%+10 d)$
Resistance	400 Ω to 40 M Ω (6 rges)	400 Ω to 40 M Ω (6 rges)	400 Ω to 40 M Ω (6 rges)	200 Ω to 20 M Ω (6rges)
Accuracy*	$\pm (0,8\%+4d)$	$\pm (0,5\% + 4d)$	$\pm (0,5\% + 4d)$	$\pm (0,15\% + 3 d)$
Capacitance	4 nF to 40 μ F (5 rges)	4 nF to 40mF (8 rges)	4 nF to 40mF (8 rges)	-
Accuracy*	$\pm (3\% + 4d)$	$\pm (3\% + 5d)$	$\pm (3\% + 5d)$	-
Frequency	4 KHz to 4 MHz (4 rges)	4 KHz to 40MHz (5 rges)	4 KHz to 40MHz (5 rges)	2 KHz to 200 KHz (3 rges)
Accuracy*	$\pm (0,1\% + 2d)$	$\pm (0,1\% + 3d)$	$\pm (0,25\% + 4 d)$	$\pm (0,1\% + 3d)$
Transistor test	Ib= 10 μ ADC, Hfe: 0 to 100	-	-	-
Temperature	-	-	-50°C to 1300°C	-
Accuracy*	-	-	$\pm (0,8\% + 2^{\circ}\text{C})$	-
Logical test	yes	-	-	yes
Min pulse width	25 ns	-	-	25 ns
Duty cycle	-	-	-	0% to 90%
Accuracy*	-	-	-	$\pm (2\% + 10d)$
Continuity test	yes	yes	yes	yes
Diode test	yes	yes	yes	yes
RS-232 interface	-	-	yes	-
GENERAL SPECIFICATION				
Display	4000 cts	4000 cts	4000 cts	20 000 cts
Bargraph	41 seg.	41 seg.	41 seg.	-
Power supply	battery 9 V	battery 9 V	battery 9 V	battery 9 V
Dimensions, weight	190 x 90 x 40 mm, 320 g	190 x 90 x 40 mm, 320 g	190 x 90 x 40 mm, 320 g	190 x 90 x 40 mm, 320 g
IEC 1010	600 V CAT. III	600 V CAT. III	600 V CAT. III	600 V CAT. III

SUPPLIED WITH : a test leads set, batteries. Only for BK 390A a K probe .

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

BK PRECISION

* All accuracies are basic accuracy

High Performance DMMs with RS -232 and Datalogger Function

20.000 counts.
TRMS AC+DC

Capabilities

- Double display with Backlight, bargraph
- Bandwidth up to 50KHz
- Basic accuracy 0,06%
- Frequency and capacitance measurements
- 1000 values memory mode
- Datalogger function , up to 6 000 values
- RS-232 (opto isolated)



SEFRAM 7337

40.000 counts.
TRMS AC+DC

Capabilities

- Backlight triple display, bargraph
- Bandwidth up to 100 KHz
- Basic Accuracy 0,06%
- Frequency and capacitance measurement
- Temperature measurement
- RS-232 (opto isolated)



SEFRAM 7345

Technical Specification	SEFRAM 7337	SEFRAM 7345
DC voltage	20, 200 mV - 2, 20, 200, 1000 V	40, 400 mV - 4, 40, 400, 1000 V
Resolution	1 μ V	1 μ V
Accuracy*	$\pm (0,06\% + 10d)$	$\pm (0,06\% + 2d)$
AC, AC+DC voltage	20, 200 mV - 2, 20, 200, 750 V	400 mV - 4, 40, 400, 750 V
Resolution	1 μ V	10 μ V
Bandwidth	50 kHz	100 kHz
Accuracy*	$\pm (0,7\% + 50d)$	$\pm (0,7\% + 50d)$
DC current	20, 200 mA - 2, 10 A	40, 400 mA - 4, 10 A
Resolution	1 μ A	1 μ A
Accuracy*	$\pm (0,2\% + 40d)$	$\pm (0,2\% + 4d)$
Current AC, AC+DC	20, 200 mA - 2, 10 A	40, 400 mA - 4, 10 A
Resolution	1 μ A	1 μ A
Bandwidth	40 Hz - 3 kHz	40 Hz - 400 Hz
Accuracy*	$\pm (0,8\% + 50d)$	$\pm (0,8\% + 8d)$
Protection (IAC, DC)	HBR fuses (10kA/1A/600V and 100 kA/15A/600V)	HBR fuses (10 kA/1 A/600 V and 100 kA/15 A/600 V)
Resistances	200 Ω - 2, 20, 200 k Ω	400 Ω - 4, 40, 400 k Ω
	2, 20, 200, 2000 M Ω	4, 40 M Ω
Resolution	0,01 Ω	0,01 Ω
Accuracy*	$\pm (0,3\% + 30d)$	$\pm (0,3\% + 2d)$
Continuity (with beeper)	Threshold approx. 50 Ω	Threshold approx. 50 Ω
Diode test	Max.voltage 3,3 V	Max.voltage 3,3 V
	Voltage max. 3,3 V (test current : 1,1 mA typ.)	Voltage max. 3,3 V (test current : 1,1 mA typ.)
Capacitance	4, 40, 400 nF - 4, 40, 400 μ F - 4, 40 mF	40, 400 nF - 4, 40, 400 μ F - 4, 10 mF
Resolution	1 pF	1 pF
Accuracy*	$\pm (0,9\% + 5d)$	$\pm (0,9\% + 20d)$
Frequency	20,200 Hz - 2,20,200 kHz - 1 MHz	400 Hz - 4, 40, 400 kHz - 4 MHz
Resolution	0,01 Hz	0,01 Hz
Accuracy*	$\pm (0,01\% + 10d)$	$\pm (0,01\% + 1d)$
Input protection	600 VRMS according to Ω , C, F, diode	600 VRMS according to Ω , continuit�, diode, C, F
Temperature	-200 to 1200 $^{\circ}$ C	- 200 to 1250 $^{\circ}$ C
Resolution	0,1 $^{\circ}$ C	0,1 $^{\circ}$ C
Accuracy*	$\pm (0,1\% + 3^{\circ}$ C)	$\pm (1^{\circ}$ C + 2d)

ADVANCED FUNCTIONS	SEFRAM 7337	SEFRAM 7345
Zoom function and central zero on bargraph	•	•
AUTO HOLD	•	•
Automatic detection of the fuse state	•	•
Indicator of test leads connection	•	•
MAX/MIN/MAX-MIN/AVG	•	•
Relative mode	•	•
dB, dB (programmable load)	•	•
Limits test (Hi and Low)	•	•
Memory mode (1000 values)	•	•
Datalogger function (values)	(6000)	•
Peak hold (0,5ms)	•	•
RS-232 cable	•	•
Software + cable	option	•
GENERAL SPECIFICATION	SEFRAM 7337	SEFRAM 7345
True RMS	AC, AC+DC	
Backlight display	Main : 20.000 cts Secondary : 20.000 cts/ Bargraph : 83 segments	Main : 40.000 pts/ Secondary : 2 x 40.000 pts Bargraph : 80 segments
Measurement rate	2/sec (in 20.000 counts mode) 4/sec. (in 4.000 counts mode)	2/sec (in 20.000 counts mode) 4/sec. (in 4.000 counts mode)
Auto power off	30 min.	30 min.
Power supply / Autonomy	battery 9V / 100h.	battery 9V / 100h.
Sealing category	IP 64	IP 64
IEC 1010	600 V CAT III / 1000 V CAT II	600 V CAT III / 1000 V CAT II
Dimensions, weight	100 x 212 x 55 mm, 600 g (with holster)	100 x 212 x 55 mm, 650 g (with holster)

SUPPLIED WITH : A test leads set, an alligators set, a protective holster, a battery, a thermocouple adapter (ST306) and a K probe (ST305).
Only for Sefram 7345 : an RS-232 cable (SI 659) and the applications software (SI 660).

Optional accessories : see page 54, 55, 56, 57

SI 659 - RS-232 Interface
SI 689 - application software for Sefram
SC 500 - carrying case

SI 689 and SI 660 Applications Software



Virtual multimeter with :

- Digital display
- Pointer Display
- Limits test with alarm
- Simultaneous statistical display (Min, Max, M ax-Min & Average)
- Programmable sampling period (from 0,5s to 5 mn)

Export acquired data to different applications

- DMM data acquisition to a PC in a real time
- Transfer of the DMM data to a PC.
- Display data in a tabular or graphical formats
- Standard printing under Windows®
- Copy to the Windows® clip board
- Static data linking (OLE with different spread sheets Excel®)
- Dynamic data exchange (DDE with compatible Windows® applications).



RS-232 cord allows enables direct data transfer from your multimeter to your PC.

* All accuracies are basic accuracy

Cost effective precision



2007 **NEW**

BK2880B



2007 **NEW**

BK2890A

Capabilities

- Backlight dual display, bargraph
- Bandwidth up to 100 KHz
- Basic Accuracy 0,025%
- frequency counter measurements up to 20MHz
- Square wave generator
- Conductance measurements
- IEC 1010 : 600 V CAT IV

51,000 counts.
TRMS AC+DC

Technical Specification	BK2880B	BK2890A
Voltage DC	50mV, 500mV, 1000mV, 5V, 50V, 500V, 1000V	
Resolution	1 μ V	1 μ V
Accuracy	$\pm (0,03\% + 5d)$	$\pm (0,025\% + 5d)$
AC, AC+DC voltage	50mV, 500mV, 1000mV, 5V, 50V, 500V, 1000V	
Resolution	μ V	1 μ V
Bandwidth	30Hz to 30KHz	20Hz to 100 KHz
Accuracy	$\pm (0,4\% + 25d)$	$\pm (0,4\% + 25d)$
DC current	500 μ A, 5mA, 50mA, 500mA, 5A, 10A	
Resolution	0,01 μ A	1 μ A
Accuracy	$\pm (0,1\% + 5d)$	$\pm (0,05\% + 5d)$
AC, AC+DC current	500 μ A, 5mA, 50mA, 500mA, 5A, 10A	
Resolution	0,01 μ A	1 μ A
Bandwidth	30Hz to 20KHz	30Hz to 100kHz
Accuracy	$\pm (1,5\% + 4d)$	$\pm (0,8\% + 25d)$
Protection (IAC, DC)	HPC fuses . (10K A)	
Resistances	500, 5K, 50K, 500K, 5M, 50M, 500M	
Resolution	0,01 Ω	0,01 Ω
Accuracy	$\pm (0,08\% + 5d)$	$\pm (0,05\% + 5d)$
Continuity with Buzzer	Threshold approx. 50 ohms	
Diode Test	Max Voltage . 4,8 VDC	
Capacitance	10/100/1000 nF; 10/100/1000 μ F; 10/100 mF	
Resolution	0,001nF	0,001nF
Accuracy	$\pm (1\% + 5d)$	$\pm (1\% + 5d)$
Frequency	10Hz to 2 MHz	10Hz to 2 MHz
Resolution	0,001 Hz	0,001 Hz
Accuracy	$\pm (0,02\% + 3 d)$	$\pm (0,02\% + 3 d)$
Temperature	-200°C to 1372°C	-200°C to 1372°C
Resolution	0,1°C	0,1°C
Accuracy	$\pm (0,3\% + 3^\circ C)$	$\pm (0,3\% + 3^\circ C)$

SUPPLIED WITH : A test leads set,

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

Technical Specification	BK2880B	BK2890A
Frequency counter	-	10Hz to 20 MHz
Resolution	-	-
Accuracy	-	$\pm (0,002\% + 3 d)$
Pulse measurement	500 mS / 2000mS	500 mS / 2000mS
Accuracy	$\pm (0,2\% + 3d)$	$\pm (0,2\% + 3d)$
Duty cycle	0,01% to 99,9%	0,01% to 99,9%
	0,3% par KHz	0,3% par KHz
Square generator	-	25 pre-programmed frequencies
Conductance	-	-
Temperature	Type K	Type K/J
	-200°C to 1372°C (K) / to 1200°C (J)	
dB, dBm (programmable load)	yes	yes
GENERAL SPECIFICATION		
Display with backlight	51 000 counts with bargraph 80 segments	
Measurement rate	2meas/ sec	2meas/ sec
Auto Power off	yes	yes
Battery life	80 hours (9V battery)	80 hours (9V battery)
IEC1010	600V CAT IV	600V CAT IV
Dimensions, weight	192 x 90 x 37, 936g	192 x 90 x 37, 936g



A large display provides a very easy measurement reading. All the necessary function are available from the rotary button.



* All accuracies are basic accuracy

CONVENIENT AC CLAMP-ON METERS for electrical maintenance

This family is designed for Electrical technicians .
They are excellent for one handed operation



Technical Specification	MW 3025	MW 3350	MW 3352	MW3355
IAC	200 A	400, 600A (2 rges)	400,600A ((2 rges)	400, 600ARMS (2 rges)
Accuracy*	± (3% +3d)	± (1,9% + 5d)	± 1,9%+5d)	± (1,9% + 5d)
Resolution	0,1 A	0,1A	0,1A	0,1A
VDC	200V,1000V	400V / 600V	400V/1000V	400V / 600V
Accuracy*	± (1%+2d)	± (0,7%+2d)	± (0,7%+2d)	± (0,7% + 2d)
Resolution	0,1V	100mV	100mV	100 mV
VAC	200V,750V	400 V, 600 V	400V/ 750V	400V, 600V
Accuracy*	± (1,5%+2d)	± (1% + 5d)	± (1%+5d)	± (1% + 5d)
Resolution	0,1V	100 mV	100mV	100 mV
Resistance	200 à 20M Ω	400 Ω	400 Ω	400 Ω
Accuracy*	± (1%+2d)	± (1%+3d)	± (0,1%+2d)	± (1% + 3d)
Continuity test	yes	yes	yes	yes
Frequency	-	400Hz	4KHz/10KHz	400Hz
Accuracy*	-	± (0,1% + 2d)	± (0,1%+2d)	± (0,1% + 2d)
General Specification				
Jaw opening	16 mm	36 mm	36mm	36 mm
Display	2000 cts	4000 cts	4000 cts	4000 cts
Function	Hold	Hold/Peak/Min, Max	Hold/Peak/Min,Max	Hold/Peak/Min, Max
Power supply	Battery 2x 1,5V	Battery 9V	Battery 9V	Battery 9V
Autonomy	250h	300 h	300 h	300 h
Dimensions, weight	54 x 193 x 31, 280g	76 x 220 x 50, 360g	76x220x50, 360g	76 x 220 x 50, 360 g
IEC1010	600V CAT III	600 V CAT III	600 V CAT III	600 V CAT III



The MW 3352 provides the temperature measurement from -40°C to 1000° C

SUPPLIED WITH : A test leads set and battery Optional accessories : see page 54, 55, 56, 57

The MW 3380 offers enhanced safety : IEC1010 cat IV 600V.
A complete range of products for technicians who need large jaw opening.



Technical Specification	MW 3450	MW 3380	MW 3100
IAC	60, 600 A	400, 1000 A	32, 320, 1000 A
Accuracy*	± (1,9% + 2d)	± (1,9% + 5d)	± (1,5% + 5d)
Resolution	0,01A	100 mA	10 mA
VDC	1000V	400 V, 1000 V	320 mV to 1000 V (5 cal)
Accuracy*	± (1% + 2d)	± (0,7% + 2d)	± (0,5% + 1 d)
Resolution	10mV	100 mV	100µV
VAC	750 V	400, 750 V	3,2 V to 750 V (4 cal)
Accuracy*	± (2% + 2d)	± (1% + 5d)	± (1,5% + 4d)
Resolution	10 mV	100 mV	1mV
Resistance	2000 Ω	400 Ω	320 Ω to 30 MΩ (6cal)
Accuracy*	± (2% + 2d)	± (1% + 3d)	± (1% + 3d)
Continuity test	yes	yes	yes
Frequency	-	4 KHz / 10KHz	320 Hz to 32 KHz
Accuracy*	-	± (0,1% + 2d)	± (1% + 4d)
General Specification			
Jaw opening	38 mm	53 mm	57 mm
Display	10 000 cts	4000 cts	3200 cts
Function	Hold	Hold/Peak/Min, Max	Hold, Peak
Power supply	battery 9 V	battery 9 V	battery 9 V
Autonomy	250 h	300 h	200 h
Dimensions, weight	83 x 200 x 48mm, 375 g	90 x 275 x 51mm, 420 g	102 x 277 x 49mm, 500 g
IEC 1010	600 V CAT III	600 V CAT IV	600 V CAT III



A large display for more accuracy

SUPPLIED WITH : A test leads set and battery OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

Leakage Current Clamp-on meter with high Accuracy



2007
NEW

MW 3950

Capabilities

- Measurement up to 100A
- Large Display with backlight
- **Analogue Output**
- Auto power off
- Low Pass Filter
- Mode Hold, Peak and comparison
- IEC 1010: 600V CAT III

Technical Specification	MW 3950
IAC	60mA, 600mA, 6mA, 6A, 60A, 100A
Basic Accuracy	± (1% + 3 d)
Resolution	0,01 mA
General Specification	
Jaw opening	43 mm
Display	6000 cts
Function	Peak, Hold
Power Supply	2x 1,5V
Autonomy	300 hours
Dimensions, weight	78 x 203 x 42, 300g
IEC1010	600V CAT III



Clamp-on meters for AC and DC Current measurements.



2007
NEW

Technical Specification	MW 3030	BK 316	MW 3360	MW 3390	MW 3460
IDC	40, 300 A	10, 80, 100 A	400,600A (2 rges)	400, 1000 A	60,600 A
Accuracy*	± (1% + 2d)	± (2,5% + 10d)	± (1,5%+5d)	± (1,9% + 3d)	± (1,9% + 2d)
Resolution	10 mA	1 mA	0,1A	100 mA	0,01A
IAC	40, 300 A	10, 80, 100A	400,600A (2 rges)	400,1000 A	60,600A
Accuracy*	± (1% + 3d)	± (2% + 10d)	± ((1,9%+5d)	± (1,9% + 5d)	± (1,9% + 2d)
Resolution	10 mA	1 mA	0,1A	100 mA	0,01A
VDC	400 mV à 600 V (5 rges)	600 V	400V/600V	400 V, 1000 V	1000V
Accuracy*	± (0,5% + 2d)	± (1% + 2d)	±(0,7%+2d)	± (0,7% + 2d)	±(1%+2d)
Resolution	100 mV	100 mV	100mV	100mV	0,01mV
VAC	400mV to 600V (5 rges)	600 V	400V/ 600V	400, 750 V	750V
Accuracy*	±(1,5% + 2d)	±(1,5% + 5d)	±(1%+5d)	±(1% + 5d)	±(2%+2d)
Resolution	100 mV	100 mV	100mV	100 mV	100mV
Resistance	400 Ω to 40 MΩ (6 rges)	10 KΩ	400 Ω	400 Ω	2000 Ω
Accuracy*	± (0,9% + 3d)	± (1% + 3d)	± (1%+3d)	± (1% + 3d)	± (2%+2d)
Continuity test	yes	yes	yes	yes	yes
Frequency	-	-	400 Hz	400 Hz	-
Accuracy*	-	-	±(0,1%+2d)	± (0,1% + 2d)	-
General Specification					
Jaw opening	25 mm	12,5 mm	45 mm	53 mm	38 mm
Display	4000 cts	10 000 cts	4000 cts	4000 cts	10 000 cts
Function	Hold, Max	Hold, Peak	Hold/Peak/Min,Max	Hold/Peak/Min,Max	Hold
Power Supply	2 x 1,5 V (LR03)	2 x 1,5V AAA	Battery 9V	Battery 9V	Battery 9V
Autonomy	60 h	60 h	300 h	300 h	250h
IEC10101	600 V CAT II	600 V CAT II	600V cat III	600 V CAT IV	600 VCAT III
Dimensions, weight	66 x 192 x 27, 205 g	202 x 70 x 34, 180 g	72 x 235x51, 380 g	90 x 275 x 51, 420g	83x200x 48, 375 g

SUPPLIED WITH : A test leads set and battery
OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

Ideal tools for measurements up to 1000 A AC /DC.



Technical Specification	MW 3105	MW 3365	MW 3395	MW 3465
IDC	400, 1000 A	400,600A (2 rges)	400, 1000 A	60,600 A
Accuracy*	± (1,5 % + 5d)	± (1,5 % + 5d)	± (1,9% + 3d)	
Resolution	100 mA	0,1A	100 mA	
IAC	400,1000 A RMS	400,600A (2 rges)	400,1000 A RMS	60,600A
Accuracy*	± (1,5 % + 5d)	± (1,9%+5d)	± (1,9% + 5d)	
Resolution	100 mA	0,1A	100mA	0,01A
VDC	400 mV to 1000 V (5 cal)	400V/600V	400 V, 1000 V	1000V
Accuracy*	± (0,5% + 1d)	± (0,7%+2d)	± (0,7% + 2d)	± (1%+2d)
Resolution	100 µV	100 µV	100mV	0,01 µV
VAC	400 mV to 1000 V (5 cal)	400V/ 600V	400, 750 V RMS	750V
Accuracy*	± (1%+5d)	± (1%+5d)	(1% + 5d)	± (2%+2d)
Resolution	100µV	100µV	100mV	100µV
Resistance	400Ω to 40MΩ	400 Ω	400 Ω	2000 Ω
Accuracy*	± (1% + 2d)	± (1%+3d)	± (1% + 3d)	± (2%+2d)
Continuity Test	yes	yes	yes	yes
Frequency	100Hz à 400KHz (5 cal)	400Hz	400Hz	-
Basic Accuracy	± (0,1% + 4d)	±(0,1%+2d)	± (0,1% + 2d)	-
General Specification				
Jaw opening	57 mm	45 mm	53 mm	38 mm
Display	4000 cts	4000 cts	4000 cts	10 000 cts
Function	Hold, Min,Max,Rel,Peak	Hold/Peak/Min,Max	Hold/Peak/Min,Max	Hold
Power Supply	battery 9 V	battery 9 V	battery 9 V	battery 9 V
Autonomy	300 h	300 h	300 h	250 h
Dimensions, weight	102 x 277x 49, 540g	72 x 235 x 51, 380g	90 x 275 x 51, 420g	83 x 200 x 48, 375g
IEC1010	600 V CAT III	600 V CAT III	600 V CAT IV	600 V CAT III

SUPPLIED WITH : A test leads set and battery. OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

Single and Three Phases Power measurements , made easy

Capabilities

- TRMS AC+DC
- Measures Power in single and three phases system
- Power factor
- Phase sequency indicator
- Inrush Mode
- IEC 1010: 600V CAT III



MW 3398

Technical Specification	MW 3398
I(DC, AC, TRMS)	400,600A (2 rges)
Accuracy	± (1,5%+5d)
Resolution	0,1A
V(AC/DC/TRMS)	60, 600,750VAC, 1000VDC
Accuracy	± (1,%,+5d)
Resolution	10mV
Resistance	400, 40 Mohm
Accuracy	± (1%+3d)
Continuity Test	yes
Active Power	4KW, 450KW
Accuracy	± (2,5%+5d)
Power Factor	-1 to +1 , ± 3 degré
THD (Total Harmonic Distorsion)	0,1% to 1%
Accuracy	± (3%+10d)
Phase sequency indicator	yes
Frequency	20Hz à 4KHz
Accuracy	± (0,1%+5d)
Temperature	-50°C to 1000°C
Accuracy	± (1%+3°C)
Opening Jaw	45 mm
General Specification	
Display	6000 counts
Backlight	yes
Function	Peak, Min, Max, Hold
Power Supply	9V.
Autonomy	50 hours
IEC 1010	CAT III , 600V
Dimensions, weight	78 x 235 x 51,380g

SUPPLIED WITH : A test leads set, battery, carrying pouch.

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

The toughest solution for your electrical applications

Capabilities

- TRMS AC+DC
- Max jaw opening 55 mm
- Current measurements up to 1000 A AC/DC
- Voltage measurements up to 600 V AC/DC
- Measures Power (Watt,VA,VAR) in single and three phase system.
- Power factor (cosPhi)
- Frequency measurements
- Min. Max. modes
- RS-232 (isolated)
- IEC 1010 : 600 V CAT III

TRMS AC+DC



MW 3200

Technical Specification MW 3200

(AC; DC; TRMS)	400/ 1000 A
Accuracy*	± (1,5 %L + 5d)
Resolution	0,1/ 1 A
V (AC; DC; TRMS)	400/ 600 V
Accuracy	±(1 %L + 5d)
Resolution	0,1/ 1 V
Active, reactive, apparent power	40/ 400/ 600 kW

* Active power = W - Apparent = VA - Reactive = VAR

Power factor	0,3 cap. to 0,3 ind.
Resolution	0,01
Frequency	20 Hz to 1 kHz
Resolution	0,1 Hz

General Specification

Display	4000 cts - Bargraph
Auto power off	yes
Power supply	pile 9V / 15h. typ.
Dimensions, weight	251 x 98 x 52, 500 g
IEC 1010	600 V CAT III

SUPPLIED WITH : A test leads set, battery, carrying case and user manual

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

SI 655 - application software

Capabilities

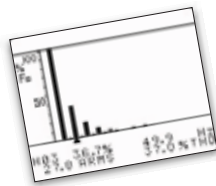
- TRMS AC+DC
- Max.jaw opening 60mm
- Signal waveform display using the oscilloscope function
- Can measure and display 5 different parameters simultaneously
- Current meas. AC/DC from 0,5 to 2000 A.
- Measures Power (Watt,VA,VAR) in single and three phase systems.
- Power factor (cosPhi)
- Active energy measurements (KWh)
- THD (Total harmonics distortions) for complex and distorted waveform
- Frequency measurements
- Min. Max. and Peak modes
- Harmonics analysis up to the 25th harmonic (using the SI655 software for MW3500)
- Data logging with a minimum number of 5000 records and 8 waveforms in the scope mode.
- Isolated RS-232 for PC connection.
- IEC 1010 : 600 V CAT IV

AC/DC current measurement from 0,5 A



MW 3600

TRMS AC+DC



Direct display of the harmonic levels (MW 3600) : The model MW 3500 uses the SI 655 software to display harmonics.

Technical Specification	MW 3500	MW 3600
I (AC; DC; TRMS)	40 / 400 / 2000 A	40 / 400 / 2000 A
Accuracy	± (1,5 % + 5d)	± (1,5 % + 5d)
Resolution	0,01 / 0,1 / 1 A	0,01 / 0,1 / 1 A
V (AC; DC; TRMS)	4 / 40 / 400 / 750 V	4 / 40 / 400 / 750 V
Accuracy	± (1 % + 5d)	0,01 / 0,1 / 1 A
Resolution	0,001 / 0,01 / 0,1 / 1 V	0,001 / 0,01 / 0,1 / 1 V
Harmonics (V and I)	25th harmonic by. SI 655 software	25th harmonic display on the clamp
Total harmonic distortion (THD))	for current and voltage (from 1 to 600 %)	
Distortion factor	by software	yes
Active, reactive, apparent power	4 / 40 / 400 / 1200 kW	4 / 40 / 400 / 1200 kW
* Active power = W - Apparent = VA - Reactive = VAR		
Power factor	0,3 cap. to 0,3 ind.	0,3 cap. to 0,3 ind.
Resolution	0,01	0,01
Active power	4 / 40 / 400 / 4000 / 40000 kWh	
Resolution	1 kWh	1 kWh
Frequency	20 Hz to 1 kHz	10 Hz to 1 kHz
Resolution	0,1 Hz	0,1 Hz
Oscilloscope mode		
Current measurement	40 to 2000 A (3 rges)	10 to 2000 A (8 rges)
Voltage measurement	4 to 1000 V (4 cal.)	4 to 1000 V (8 cal.)
Time base	2 / 4 / 10 / 50 ms / div.	2 / 4 / 10 / 50 ms / div.

* All accuracies are basic accuracy

General Specification MW 3500 MW 3600

Interface	RS-232 (9600 bps)
Software SI 655 + cable	option
Memory	8 écrans, 2000 mesures 8 écrans, 5000 mesures
Function	Min, Max, Hold
Display	Backlight matrix LCD (160 x 128)
Jaw opening	60 mm
Auto power off	yes
Power supply	6 x 1,5 V (LR6)
Autonomy	24 h. typ.
IEC 1010	600 V CAT IV
Dimensions, weight	300 x 98 x 52 mm, 820 g

SUPPLIED WITH : A test leads set, battery, carrying case and user manual

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

SI 655 - application software

ELECTRICAL TESTERS

The best quality / price insulation testers



MW 9050A

Capabilities

- Insulation measurement up to 1000 VDC
- Test voltage (250, 500, 1000V)
- Resistance measurements : 500 Ω or 2K Ω
- AC Voltage measurement
- Robust case .
- IEC1010 600V CATIII



MW 9050D

Capabilities

- Test voltage 250, 500, 1000V
- Resistance measurements : 8 Gohms
- Automatic measurements
- Continuity test with buzzer
- IEC 1010 : 600 V CAT III



MW 9070D



MW 9110

Capabilities

- Large display with bargraph
- Insulation measurement up to 1000VDC
- Test voltage (250, 500, 1000V)
- Resistance measurements : 4000 M Ω
- Carrying pouch.
- IEC 1010 : 600 V CAT II



Technical Specification	MW 9050A	MW 9050D	MW 9070D	MW 9110
Insulation resistance	100 / 200 / 400 M Ω	200 / 2000 M Ω	0 à 8 G Ω	4 / 40 / 400 / 4000 M Ω
Accuracy*	$\pm 5\%$ full range	$\pm (1,5\% + 5d)$	$\pm (1,5\% + 5d)$	$\pm (3\% + 5d)$
Test voltage	250 / 500 / 1000 VDC	250 / 500 / 1000 VDC	250 / 500 / 1000 VDC	250 / 500 / 1000VDC
Continuity - low Ohm	3 Ω à 500 Ω (test current > 200mA)	20 à 2K Ω (test current > 200mA)	0-20 Ω (test current > 200mA)	0-40 Ω (test current > 200mA)
Resistance	3 / 500 Ω	20 / 2 K Ω	-	400 Ω / 4000 Ω
Accuracy*	$\pm 1\%$ full range	$\pm (1,5\% + 3d)$	-	$\pm (1\% + 5d)$
AC voltage	0-600V	0-600V	0-700V, 0-950VDC	0-600 V
Accuracy*	$\pm 3\%$ full range	$\pm (1,5\% + 3d)$	$\pm (1,5\% + 5d)$	$\pm (1\% + 3d)$
General Specification				
Display	Analogue	2000 cts	Digital (2 lines of 16 characters)	2000 cts
Power supply	8 x 1,5V (AA LR6)	8 x 1,5V (AA LR6)	8x1,5V (alkaline)	8 x 1,5V (LR6)
Dimensions, weight	170 x 165x 92 mm, 1100 g	170 x 165 x 92 mm, 1040 g	175 x 85 x 75 mm, 655g	196 x 112 x 64 mm, 700 g
IEC1010	600V CAT III	600V CAT III	600V CAT III	600V CAT II

SUPPLIED WITH : 1 set of test leads, 2 alligators clips, batteries

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

Insulation tester up to 10KV



MW 9180

Capabilities

- Insulation measurement up to 10KVDC
- Test voltage (500, up to 10KV) in 500V steps.
- Bargraph indicates test voltage, decay can be observed during discharge.
- Measures insulation test time.
- Display warning of external voltage.

Technical Specification		MW 9180
Test voltage		500 / 10KV in 500 V steps
Resistance		800 K Ω to 500 G Ω
Accuracy*		\pm (10% \pm 2 counts)
Test current		1,5 mA under 1 W
Short circuit current		Electronic limited to 1 W
Transfer time		Automatic through test voltage
Circuit discharge		Automatic display on bargraph
Timer		to 99,9 secondes
Protection		Voltage detection < 300 VAC
General Specification		
Display		2 lines of 16 characters
Power supply		8 x 1,5V (LR14)
Dimensions, weight		320 x 270 x 170 mm, 3,6Kg

SUPPLIED WITH : With a connection Kit (SE 715), including a probe, two safety test leads, two safety alligators clips and one alligator test lead.

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

For your circuit breaker testing, in total safety

Capabilities

- Check circuit breakers, measuring the trip current , trip time and contact voltage
- AC/DC voltage measurement
- Frequency measurement
- RS-232 Interface
- 500 measurements memory
- Display 2000 counts.

Technical Specification		MW 9200		
• RCCB test	RCCB type	AC, general, Selective		
	Nominal current	10, 30, 100, 300, 500 mA		
	Tripping time	Test voltage	I _N	2I _N 5I _N
Tripping current	Ranges (ms)	0-1000	0-200	0-50
	Ranges	(0,5 to 1,4) I _N		
	Contact voltage	Ranges	0-99,9 V	
• AC,DC voltage	Ranges/ accuracy	0-250 V / ± (2% + 2d)		
• Frequency	Ranges	25 - 500 Hz		
General Specification				
Power supply	4 x 1,5 V (LR14)			
Autonomy	1200 meas.			
Dimensions, weight	110 x 65 x 290 mm, 750 g			
IEC 1010	300 V CAT II			



MW 9200

SUPPLIED WITH : A mains test cable EURO/SHUKO (SE701) and 4 batteries.
Optional accessories : see page 54, 55, 56, 57

* All accuracies are basic accuracy

The easiest Earth measurement tester

Capabilities

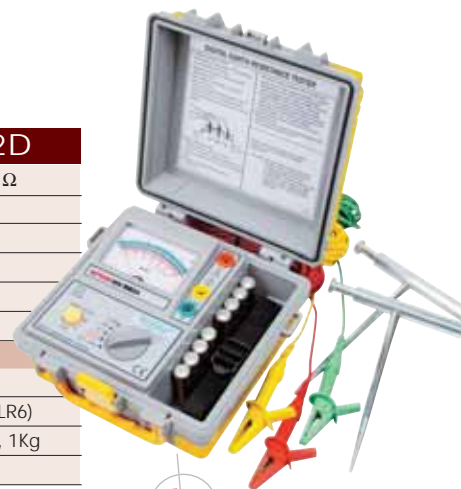
- Measures earth resistance with 2 or 3 rods.
- Measures ground voltage
- Robust case



2007 **NEW**
MW 9452 D

Technical Specification	MW 9452A	MW 9452D
Earth resistance	0 / 10 / 100 / 1000 Ω	0 / 20 / 200 / 2000 Ω
Accuracy*	$\pm 2,5$ % full range	$\pm (2\% + 2d)$
Measurement current	2 mA Approx.	2 mA Approx.
Short circuit	Yes (LED)	Yes (LED)
Earth voltage	0 to 30VAC	0 to 200 VAC
Accuracy*	± 3 % full range	$\pm (1\% + 2d)$
General Specification		
Display	Analog	2000 cts
Power supply	8 x 1,5 V type AA (LR6)	8 x 1,5 V type AA (LR6)
Dimensions & Weight	170 x 165 x 92 mm, 1Kg	170 x 165 x 92 mm, 1Kg
IEC 1010	300 V CAT II	300 V CAT II

SUPPLIED WITH : A set of 3 cables (SE 713), 3 alligators clips and 2 rods.



2007 **NEW**
MW 9452 A

For rapid and comprehensive earth loop resistance testing

Technical Specification		MW 9300	
Impedance P-N/P-P	0 to 2000 Ω	Accuracy : ± (2% + 2d)	
Short circuit current P-N / P-P	0,06 A to 40 kA	Accuracy : ± (2% + 2d)	
Earth loop resistance P-N/P-E	0 to 200 Ω		
Accuracy	± (2%L + 2d)		
AC,DC voltage	0- 440 V	Accuracy : ± (2%L + 2d)	
Frequency	25 - 500 Hz		
General Specification			
Power supply	4 x 1,5 V (LR14)	Dimensions	110 x 65 x 290 mm
Autonomy	1200 meas.	Weight	750 g
IEC1010	300 V CAT II		

SUPPLIED WITH : A mains test cable SHUKO curly type (2m) (SE 704) and 4 batteries

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

• SE 705 - Set of 3 bananas plugs and 3 alligators clips.



MW 9300

Capabilities

- Measures earth loop resistance without rods and short circuit current.
- AC/DC Voltage measurements
- Frequency measurements
- RS-232 interface
- 500 measurements memory .
- Display 2000 counts

Phase sequence indicator

Capabilities

- Indicates phase rotation
- Indicates phase presence
- Easy to use
- Small and robust enclosure
- Delivered with holster
- IEC1010: 600V - CAT III



SEFRAM 80

Capabilities

- Indicates phase rotation
- Indicates phase presence
- Easy to use
- LCD display
- Small and robust enclosure
- Delivered with holster
- IEC1010: 600V - CAT III



2007 **NEW**
SEFRAM 82



SEFRAM 86

Technical Specification	SEFRAM 80	SEFRAM 82	SEFRAM 86
AC voltage input	200-600V AC	40 - 700V AC	100 - 600V
Bandwidth	50-60 Hz	15 - 400 Hz	45 - 70 Hz
General Specification			
Power supply	-	-	Battery 9V
Dimensions, weight	134 x 85 x 45 mm, 350g	150 x 72 x 34 mm, 160g	153 x 72 x 35mm, 182g
IEC1010	600V - CAT III	600V - CAT III	600V - CAT III

SUPPLIED WITH : SE 710, kit of 3 bananas plugs, 3 alligators clips and 1 battery (Sefram 86 only).

* All accuracies are basic accuracy

Capabilities

- Indicates phase rotation
- Indicates phase presence
- Indicates battery status, motor rotation
- Indication works as low as 1Vac
- Small and robust enclosure
- Delivered with holster
- EC1010: 600V - CAT III

Comprehensive electrical installation testing



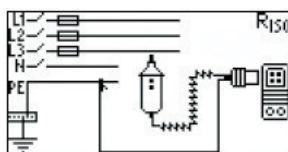
MW 9600

Capabilities

- Insulation tester
- Loop tester
- Earth resistance with rods (MW 9650 only)
- RCCB. Tester
- Continuity and frequency measurement
- Phase sequence indicator
- Lux meter (MW 9650)
- External software (MW 9650 only)
- IEC 1010 : 600 V CAT III

Easy to use

Thanks to the large display with backlight, the units display all schematics.



Complete units

The MW9600, MW9650 allows all single and three phases measurements

Technical Specification	MW 9600	MW 9650
RCCB tester	Type A, AC , general, selective	Type A, AC , general, selective
Leakage current	10, 30,100, 300,500,1000 mA	10, 30,100, 300,500,1000 mA
Tripping time	test current 0,5I _{Δn} , 1I _{Δn} , 2I _{Δn} , 5I _{Δn}	test current 0,5I _{Δn} , 1I _{Δn} , 2I _{Δn} , 5I _{Δn}
Contact voltage	0 à 99,9V	0 to 99,9V
Earth Loop tester	yes	yes
Earth Loop resistance	0 to 2000 Ω	0 to 2000 Ω
Nominal voltage	100 - 264 V	100 - 264 V
Loop impedance	0 to 20 KOhms	0 to 20 KOhms
short circuit current	0 to 24,4 KA	0 à 24,4 KA
Insulation resistance	0 à 999 MOhms	0 à 999 MOhms
Open circuit voltage	100, 250, 500, 1000V	100, 250, 500, 1000V
Low ohm continuity	0 to 20 Ω	0 to 20 Ω
AC voltage	0 à 440 V	0 à 440 V
Frequency	45 to 65Hz	45 to 65Hz
Phase rotation	yes	yes
Earth resistance	no	yes
Luxmeter	no	option
Leakage current measurement	no	option
Memory	yes	yes
General Specification		
Display	LCD with backlight. 128 x 64 dots	LCD with backlight. 128 x 64 dots
RS-232 and USB interface	-	yes
Power supply	9VDC (6x1,5V)	9VDC (6x1,5V)
Dimensions, Weight	230 x 103 x 115 mm, 1,32 Kg	230 x 103 x 115 mm, 1,32 Kg
IEC 1010	600V CAT III	600V CAT III

SUPPLIED WITH :

A carrying bag.

OPTIONS FOR MW9650 :

SE 717 : luxmeter probe B,
SE 718 : luxmeter probe C,
SP 210 and SP 222 : Leakage current clamp



* All accuracies are basic accuracy

RECORDER PRODUCT SELECTION



DAS 1200

The new Sefram recorder is a unique high performance instrument for all your industrial and maintenance application.

Capabilities

- 2 Channels and 8 logical channels
- 12 bit resolution / sampling : 1Ms/s
- Recorder, Multimeter, and Oscilloscope mode
- Massive storage capacity (compact flash interface)
- Calculation functions and mathematical combination of channels
- RS-232 Interface for external printer
- Power supply for external sensors
- High safety level : IEC1010 CAT III, 600V.

Technical Specification	DAS 1200
Channels	2 analog and 8 logical channels
Voltage input	1 mV to 200 VDC/div and 10 mV to 200 V/div for TRMS
Current input	using external shunt*
Temperature input	thermocouples J, K, T, S, B, E, N, WS
Resolution	12 bit
Frequency meter	20 Hz to 30 KHz
Sampling rate	1 Ms/s per channel max.
Memory	1 Mword in 128 blocks max.
Trigger	edge+, -, window, slope, Go No Go, delay, logical channel
Bandwidth	100 KHz
Filter	programmable
Input impedance	25 MΩ min. (rge <200 mV), 2 MΩ (rge >200 mV)
Auto measur.	F, T, Vpp, Vmax, (17 functions)
Multimeter mode	2 inputs, 4 digit, resolution 10 μV DC and AC TRMS
Oscilloscope mode	2 channel, Autoset, Timebase 50 μs to 20 mn/div
Storage	compact flash interface
Interface	RS-232 for printer
General Specification	
Display	LCD B&W, Backlighted
Power supply	9-10 V DC by jack plug (1,5 A max)
Dimensions, weight	210 (H) x 170 (L) x 80 (P) & approx. 1 kg
CEI 1010	600 V CAT III

SUPPLIED WITH : 1 set of safety test leads 1 main adaptor 230V/10VDC



Design and easy to use,

The DAS1200 was designed to be easy to use, even at first time operation.

Each button is associated with one function.

The "replay" function helps you to instantly display your records.

DAS 600 : 6-channels value for money recorder

Compact, light weight and easy to use, the DAS 600 can be your partner for many measurement applications

Capabilities

- 6 channels
- Universal isolated input
- DC, RMS AC+DC, voltage;
- Frequency, Thermocouples measurements.
- 16 logical inputs
- Resolution 14 Bit
- 12" TFT LCD screen
- Maximum sampling rate : 1Ms/s per channel
- Bandwidth 100 kHz :
- 32 M words memory
- Internal hard disk : 40 GB
- Interfaces: USB, XGA.
- Ethernet
- IEC1010: CAT III 600 V



Sefram view:

External application software for all the Sefram recorders

* option. Display all the records on graphical formats Dynamic data exchange with Excel® and Word®

New DAS1400 : new family of paperless recorders

Capabilities

- 6 to 36 channels
- Universal Input
- DC, RMS AC+DC, Frequency, Thermocouples, PT100 measurements.
- 16 logical inputs
- 16 Bit Resolution
- 12" TFT LCD screen
- Maximum sampling rate : 1Ms/s per channel
- Bandwidth 100 kHz
- 32 M words memory
- Internal Hard disk : 40 GB
- Interfaces: USB, XGA.
- Ethernet
- IEC 1010 CAT III 600V



DAS 1400

2007
NEW



8440 : A powerful data acquisition system



SEFRAM 8440

Capabilities

- 6 up to 36 channels
- Universal inputs
- DC, RMS AC+DC, Frequency, Thermocouples, PT100 measurements.
- 16 logical inputs
- 16 Bit Resolution
- 12" LCD screen
- 270 mm paper width
- Maximum sampling rate : 1Ms/s per channel
- Bandwidth 100 KHz
- 32 Mword memory
- Go-No-Go mode
- Automatic measurements
- 40 GB internal hard disk.
- Interfaces: USB, XGA.
- Ethernet
- IEC 1010 CAT III 600V

Technical Specification	SEFRAM 8440
Number of channels :	6, 12, 18, 24, 30, 36
DC voltage :	from 1mV à 1000 V
TRMS AC+DC voltage:	200mV to 500V.
bandwidth	(-3dB): 5Hz to 100Hz
Frequency	
Sensitivity	300mV rms min.
Temperature	Thermocouple: J,K,T,S,B,E,N,W5 et PT100
Sampling	
Resolution	14 Bits
Sampling rate	1Ms/s per channel
Memory lenght	32Mw in segments of up 128 blocks
Triggering	positive edg, negative edge, on logical input , Go No Go
logical inputs	
Number of channels	16
Visualisation	12 " TFT screen
Storage	
Setup backup :	16 named in RAM
Internal hard disk :	40 Gb
Interfaces	4 USB ports, VGA, Ethernet
General Specification	
power Supply	85VAC à 264 VAC, 47Hz à 63 Hz
Dimensions & weight	384 x 445 x 195 , 11 Kg
Safety	IEC 1010 CAT III , 600V

* option

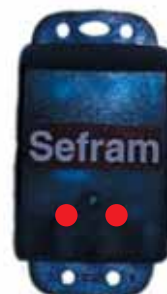
SUPPLIED WITH : a paper roll, 2 bananas plugs per input, a DIN PT 100 per input, a power cord and user's manual.

* All accuracies are basic accuracy

Compact technology for accurate checking and monitoring



- Dataloggers record : Temperature, Humidity, Current, Voltage and physical parameters
- Memory size is maximum 60 000 records
- Sampling rate from 500 ms up to 1h
- Vertical resolution : 12 Bits
- Infrared interface to download all the data and set up.
- Two Alarms
- Watertight IP 68 (SEFRAM 1501P1)



Thermoplastic case for Agriculture and food industry UL and CE approved.



2007 **NEW**



2007 **NEW**

Technical Specification	1501P1	1510-K	1510-K1	1511-PT1	1520P1	1520-K	1522-K
Measurement type	Ti	Ti + ThK	Ti + ThK	Ti + Pt100	Ti + HR	Ti + HR + ThK	Ti + 2 x ThK
internal temperature (Ti)	- 40 to + 85°C	- 40 to + 85°C	- 40 to + 85°C	- 40 to + 85°C	- 40 to + 85°C	-40 to + 85°C	-40 to + 85°C
Accuracy (Resolution) of Ti	± 1°C(±0,1°C)	± 1°C(±0,1°C)	± 1°C(±0,1°C)	± 1°C(±0,1°C)	± 1°C(±0,1°C)	± 1°C(±0,1°C)	± 1°C(±0,1°C)
External temperature (ThK or Pt100)	-	- 50 to +150°C	- 100 to +1200°C	- 200 to +850°C	-	-50 to +150°C	- 50 to +150°C
Accuracy of External T(2)	-	± 0,5°C (0,1°C)	± 2°C (0,5°C)	± 1,5°C (0,5°C)	-	± 0,5°C (0,1°C)	± 0,5°C (0,1°C)
Humidity	-	-	-	-	5% to 95%RH	5% to 95%RH	-
Accuracy in RH	-	-	-	-	± 3%	± 3 %	-
DC voltage	-	-	-	-	-	-	-
Accuracy in DC voltage	-	-	-	-	-	-	-
DC current	-	-	-	-	-	-	-
Accuracy in DC current	-	-	-	-	-	-	-
Memory capacity (measurements)	60 000	21600	21600	21600	60 000	21600	43300
Measurement period	500 ms to 1h	500 ms to 1h	500 ms to 1h	500 ms to 1h	2s/ to 1h	2s to 1h	500 ms to 1h
Converter resolution	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits	12 bits
Alarms	2	2	2	2	2	2	2
Alarm output	-	1	1	1	1	1	1
Sealing category	IP 68	IP 32	IP 32	P 43	IP 43	IP 32	IP 32
Tamper-proof	-	-	-	-	-	-	-

General Specification

Safety standard	IEC 1010 CAT I 30 V
Autonomy	2 years
Temp. of storage	- 40 to + 85 °C
Dimensions	42 x 57 x 25 mm
Weight	52g

- (1) Option with accessory 915003120
(2) For thermocouples add ± 1°C on accuracy

OPTIONAL ACCESSORIES :

With SEFRAM LOG 1511PT and 1511PT1 :
Connector with 3 wires screw bounding for PT100 cabling (SA213)
With SEFRAM LOG 1550-K1 and 1555 :
5-way screw connector (SA215)

OPTIONAL ACCESSORIES :

- SC 600
- SI 683
- SI 687
- SI 692
- SI 693
- SP 205 (2)
- SP 215 (2)
- ST 400
- ST 401
- ST 402
- ST 405
- ST 406
- Transport case
- Application software on CD-rom
- Start/Stop remote control (for all models)
- Kit with USB interface and infrared transmitter-receiver
- Kit with: software + infrared transmitter-receiver + USB cable
- Current transducer (1 VDC/10 AAC-25 A, Ø 15 mm)
- Current transducer (1 VDC/100 AAC-250 A, Ø 50 mm)
- Bead probe "K" type, general use, -40 to 204°C
- Bead probe "K" type, general use, -40 to 204°C, 2m
- Food probe "K", 350°C
- PT100 probe, -70°C to 250°C, 2m
- Bead probe "K" type, general use, -40 to 204°C 1m for 1550-K1 only



* All accuracies are basic accuracy

(2) see page 54, 55, 56, 57

SI 683 : Windows based software for easy data collection and analysis

Datalogger configuration : date , time , type of measurements, sample periods, alarms...

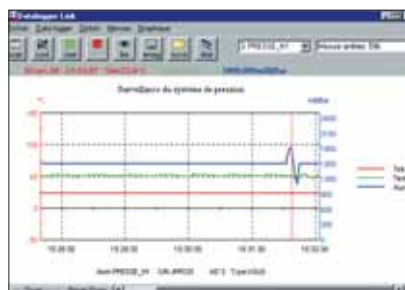
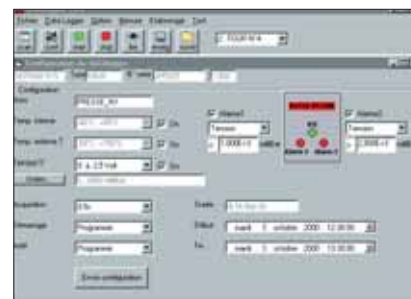
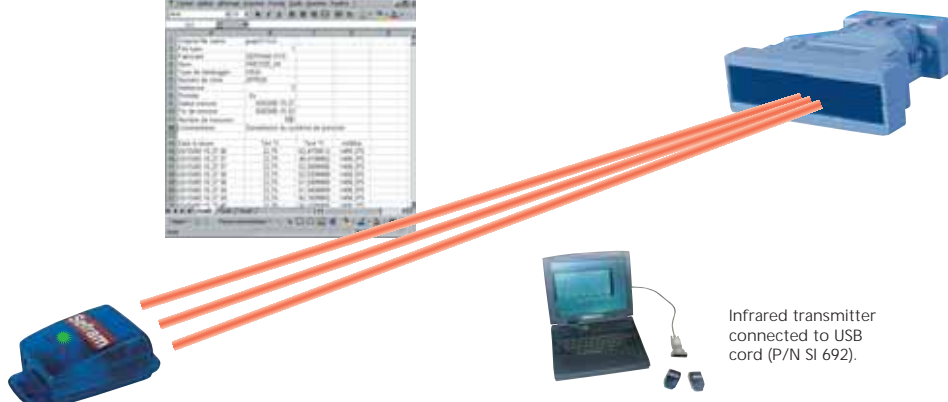
Display of stored reading in graphic form : Total and partial temperature curve with zoom function.

Data export to Microsoft® Excel® file.

Measurements in real time

Data safety : Coded file , user password.

Two Alarms : Alarms configuration by threshold (in voltage, in internal and external temperature).

Infrared transmitter connected to USB cord (P/N SI 692).

2007 **NEW**

1525-1	1530-K	1530-K1	1550-K1	1555-1
T + U	Ti + ThK + U	Ti + ThK + U	Ti + 4 x ThK	Ti+4xU
-40 to + 85°C	-40 to + 85°C	-40 to + 85°C	- 40 to + 85°C	- 40 to + 85°C
±1°C(±0,1°C)	±1°C(±0,1°C)	±1°C(±0,1°C)	±1°C(±0,1°C)	±1°C(±0,1°C)
-	-50 to +150°C	- 100 to +1200°C	- 100 to +1200°C	-
-	± 0,5°C (0,1°C)	± 2°C (0,5°C)	± 1,5°C (0,3°C)	-
-	-	-	-	-
-	-	-	-	-
2,5V/10V/25V	2,5V/10V/25V	2,5V/10V/25V	-	2,5V/10V/25V
± 0,1 %	± 0,1 %	± 0,1%	-	± 0,1%
0-25 mA ⁽¹⁾	0-25 mA ⁽¹⁾	0-25 mA ⁽¹⁾	-	0-25 mA(1)
0,25 %	0,25 %	0,25%	-	0,25%
60000	21600	21600	43300	60000
500 ms to 1h	500 ms to 1h	500ms to 1h	500ms to 1h	500ms to 1h
12 bits	12 bits	12 bits	12 bits	12 bits
2	2	2	2	2
1	1	1	-	-
IP 32	IP 32	IP 32	IP 32	IP 32
-	-	-	-	-



SEFRAM LOG 1501 PDA

SEFRAM LOG 1501P and SEFRAM LOG 1520P are fully compatible with PDA computer PALM®. PDA compatible : M130, Zire 31,72, Tungstène E2,T3, T5.

For other models please contact us.

OPTIONAL ACCESSORIES :

- 915003120 - 0-25mA, input adapter with screw connector on DIN/OMEGA rail for 1525, 1530K et K1.
- 915003121 - 0-25mA, input adapter with screw connector on DIN/OMEGA rail for 1555 only.
- 915003130 - input adapter with screw connector on DIN/OMEGA rail for SEFRAM LOG 1525 et 1530-K)
- 915003150 - Adaptor femal K thermocouple socket / jack 2,5mm
- 915003151 - Banana jack adaptater
- 915003153 - Input adapter with screw connector for 1550-K1 et 1555.
- 915005100 - Plastic bag with 10 male jacks

REPLACEMENT PARTS :

- 915005200 - Lithium Battery
- 915005300 - Seal for (SEFRAM LOG 1501)
- 915005400 - Mounting kit 5 magnets + 5 velcros



915003150



915003151



915003130

NEW

With the new Seframlog 1501P1, 1520P1, 1525-1 , You can define a selectable trigger for your records

* All accuracies are basic accuracy

ENVIRONMENTAL TESTERS

The global solution for all your temperature measurement needs



Technical Specification	SEFRAM 9809	SEFRAM 9819	SEFRAM 9874	SEFRAM 9875
Temperature range	-55°C to 250°C	-32 to 420°C	-32 to 530°C	-32°C to 760°C
Resolution	1°C	0,2°C	0,2°C	0,2°C
Accuracy* at 23 °C	2%	1%	1%	1%
Response time	1s	300ms	300ms	300ms
Distance to spot D/S	6:1	20:1	20:1	40:1
Laser sighting	yes	yes	yes	yes
Adjustable emissivity	yes	-	yes	yes
Measurement hold	yes	yes	yes	yes
Mode	-	Min/Max/Scan	Min/Max/Scan	Min/Max
High limit	-	-	yes	yes
Low limit	-	-	yes	yes
General Specification				
Display with backlight	LCD	yes	yes	yes
Power supply	CR2032	Battery 9V	Battery 9V	Battery 9V
Dimensions	22,5 x 50 x 103 mm	190 x 38 x 45 mm	190 x 38 x 45 mm	190 x 38 x 45 mm
Weight	65 g	150 g	150 g	150g

SEFRAM 9809 - SUPPLIED WITH : A carrying pouch

SEFRAM 9874 - SUPPLIED WITH : A carrying pouch (SC516)



Technical Specification	SEFRAM 9885
Temperature range	-35 to 900°C
Resolution	0,1°C
Accuracy at 23°C	± 0,75% or ± 0,75°C
Response Time	150 ms
Distance to spot D/S	75:1
Laser sighting	yes
Adjustable emissivity	yes
Measurement Hold	yes
Mode	Min/Max
High limit	yes
Low limit	yes
USB Interface	yes
Software	yes
Thermocouple input	yes
General Specification	
Display with Backlight	yes
Power Supply	Battery 2x1,5V AA
Dimensions	190 x 38 x 45 mm
Weight	420 g

SEFRAM 9885

Capabilities

- The new performance standard for infrared thermometers : detecting spot sizes as small as 1 mm for measurement of finest details
- Crosshair laser sighting marks real spot size at any distance
- Temperature range from -35° to + 900°C
- Optical resolution 75:1
- Thermocouple input
- USB interface and graphic software with oscilloscope function for 20 readings per second
- Flip display switches into most convenient viewing position



* All accuracies are basic accuracy

COMPACT THERMO-HYGRO METERS



BK 625

Thermo-Hygro Meter
Thermo-Hygro Meter
Thermo-Hygro Meter

Capabilities

- 2000 counts display
- backlight
- Hold and Max function

Technical Specification		BK 625
Humidity		0% to 100% RH
Resolution		0,1% RH
Accuracy*		± 2,5% RH
Temperature		0°C to 60°C
Resolution		0,1°C
Accuracy		± 1°C
General Specification		
Function		Hold and Max
LCD display LCD		yes, backlight
Power supply		9V battery
IEC 1010		CAT I
Dimensions, weight		178 x 65,5 x 35, 170g



BK 720

Capabilities

- Triple display
- Relative humidity from 0 to 100%
- Temperature from -200°C to 1370°C
- Min, Max, Rel functions
- Auto power off

A complete range of Humidity and Temperature Meters

Technical Specification	BK720	BK725
Humidity	0% to 100% RH	0% to 100% RH
Accuracy	±2,5% RH	±2,5% RH
Temperature	T1: -20°C to 60°C T2: -200°C to 1370°C	
Resolution	0,1°C	0,1°C
Accuracy	T1: ± 0,7°C T2 : ±(0,3%+1°C)	
Datalogger mode	-	yes
Measurement rate	-	1sec to 59 mn 59 sec
Memory capacity	-	16 300
General Specification		
LCD display	triple display	triple display
Power supply	9 Vbattery (BE-9) optional	9 Vbattery (BE-9) optional
IEC 1010	CAT I	CAT I
Dimensions, weight	270 x 68 x25 mm, 820 g	270 x 68 x25, 930 g

BK 720 SUPPLIED WITH : Bead probe and humidity sensor.

BK 725 SUPPLIED WITH : same as BK720, kit with software, RS-232 cable and protective case.



BK 725

Capabilities

- Same as BK720,
- Datalogging function with 16300 values
- Datalogging interval from 1s to 59mn 59s
- Supplied with software and • RS-232 cable



BK 710

Capabilities

- Dual input digital thermometer
- Dual display
- T1, T2, T1-T2 select
- K thermocouple from -200°C to 1370°C
- Max, Min, Avg, Rel functions
- Units: °C/°F
- Auto power Off

Technical Specification	BK710	BK715
Temperature	T1 and T2 : -200°C to 1370°C	
Resolution	0,1°C	0,1°C
Accuracy*	± (0,2% + 1°C)	± (0,2% + 1°C)
Datalogger mode	-	yes
Measurement rate	-	1 sec to 59 mn 59 sec
Memory capacity	-	16 000
General Specification		
LCD display	dual display	triple display
Power supply	9V battery, (BE-9) in option	
RS-232 Interface	yes	yes
IEC 1010	CAT I	CAT I
Dimensions, weight	184 x 64 x 30mm, 210 g	184 x 64 x 30mm, 320 g

BK 710 SUPPLIED WITH : Thermocouples and protective case.

BK 715 SUPPLIED WITH : same as BK710 + software + RS-232 cable



BK 715

Capabilities

- Same as BK710,
- Triple display
- Datalogging function with 16300 values
- Datalogging interval from 1s to 59mn 59s
- Supplied with software and RS-232 cable

* All accuracies are basic accuracy



BK 615

Compact digital lightmeter

Capabilities

- 2000 counts display
- 20 lux to 20000 lux (20fc to 20kfc)
- Max, Hold function

Technical Specification	BK 615
Ranges	20 Lux to 20 000 lux
Resolution	0,01 lux
Accuracy*	± (3% + 10 d)
Measurement rate	2,5 mes./sec
General Specification	
Display	LCD, 2000 counts
Power supply	9V battery
IEC 1010	CAT I
Dimensions	190 x 65,5 x 35 mm
Weight	220 g



BK 731A

Precision Anemometer

Capabilities

- Measurements unit: m/s, ft/mn, Km/h, knots, MPH
- Auto power Off
- Min, Max, Avg, Hold functions
- Backlight display

Technical Specification	BK 731A
Ranges	0 to 30 m/sec
Resolution	0,01 m/sec
Accuracy*	± 3%
Temperature	
Ranges	-20°C to 60°C
Resolution	0,1°C
Accuracy	± 0,5°C
General Specification	
Display	4 digits LCD
Power supply	9V battery
IEC 1010	CAT I
Dimensions	228 x 65,5 x 35 mm
Weight	330 g



BK 627

Carbon Monoxide Meter

Capabilities

- Portable and simple one hand operation
- Backlight
- Wide CO measuring range from 0 to 1000ppm
- Electrochemical sensor
- Max, Hold function

Technical Specification	BK 627
Ranges	0 to 1000 ppm
Sensor	Electrochemical
Accuracy*	± (5% + 5ppm)
General Specification	
Display	LCD 2000 counts
Power supply	9V battery
IEC 1010	CAT I
Dimensions	189 x 67 x 35 mm
Weight	200 g



BK 732A

Sound level Meter

Capabilities

- 30db to 130db ranges
- 4 digit LCD, 0.1dB resolution
- Electric condenser micro phone with windscreen
- Max, Min function

Technical Specification	BK 732A
Ranges	30 to 130 dB (ranges)
Time weighting	dBA, dBC
Dynamic range	50 dB
Frequency range	31,5Hz to 8KHz
Accuracy* (94 dB at 1 KHz)	± 1,5dB
General Specification	
Display	LCD 2000 counts
Power supply	9V battery
IEC 1010	CAT I
Dimensions	275 x 64 x 30 mm
Weight	285 g

BK 735 : BK 732A with datalogger mode, RS- 232 delivered with external software.

* All accuracies are basic accuracy

PH METER

Technical Specification	BK 760 KIT
Ranges	0 to 14 pH
Resolution	0,01 pH
Accuracy*	± (0,02pH + 2d)
Measurement rate	0 to 1999 mV
Resolution	1mV
Accuracy*	± (0,5% + 2 d)
Temp. measurement	0 to 100°C
General Specification	
Connector	BNC
RS-232	yes
IEC 1010	CAT I
Power supply	9V battery
Dimensions	190 x 65,5 x 35 mm
Weight	250 g

SUPPLIED WITH : pH probe

Handheld pH Meter

Capabilities

- pH meter with mV and "plug and play" function
- RS-232, Hold, memory, °C/°F functions

BK 760 DX

- Same as BK760KIT
- Supplied with Dissolved oxygen probe, Temp. Compensated probe, RS-232 cable and software



BK 760 KIT

ACCESSORIES



760 DOP

Dissolved oxygen probe
Range from 0 to 20mg/L
Automatic temp. Compensation (0°C to 50°C)
Sheaths & electrolyte included



760 ATC

Automatic Temp.
Compensation probe
0°C to 65°C range



760 PH

pH electrode
Range from 0 to 14pH
Measuring temp. From 0°C to 100°C



760 CP

Conductivity probe
Range: 2mS to 20mS
Temperature : 0°C to 60°C



AK760

Software with
RS-232 cable



LC760

Protective carrying case



TEMPERATURE PROBES



ST 301

Immersion probe for liquid
and gels
K type (-196°C to 800°C)



ST 302

Air probe
K type (-196°C to 500°C)
Metal protector



ST 303

Surface probe
K type (0°C to 400°C)



ST 304

Piercing probe
K type (-196°C to 800°C)
Dedicated to food industry



ST 305

Bead probe
K type (-40°C to 204°C)

ST 309

Bead probe for high
temperature
K type (-40°C to 500°C)

Instruments / Probes compatibility

	7305 BK390A	BK2706A BK630	BK710 BK715	BK720 BK725	9810	7337	7345	SEFRAM LOG
Direct (no adapter)	x	x	x	x	x	-	-	-
With ST306 adapter	-	-	-	-	-	x	x	-
With SA210 adapter	-	-	-	-	-	-	-	x

x = compatible
- = incompatible

Caution: it is necessary to check compatibility between temperature range of instruments and probes

* All accuracies are basic accuracy

BENCH MULTIMETERS



BK 2831D



SEFRAM 7211



SEFRAM 7240

Capabilities

- 20 000 counts, LED display
- Voltage measurements up to 1000VAC and 1200VDC
- True RMS AC
- Frequency meter up to 200KHz
- Current measurement up to 20A AC/DC
- Basic accuracy for DC is 0,05%
- IEC 1010 : 600 V CAT II



Capabilities

- Dual power source (batteries or mains)
- 4000 counts display
- Panoramic LCD with backlight
- True RMS AC
- Min, Max, Hold functions
- Bargraph
- IEC 1010 : 600 V CAT III



Capabilities

- Triple display with backlight and bargraph
- Dual power source (batteries or mains)
- 40000 counts
- True RMS AC+DC
- Frequency and capacitance measurements
- Min, Max, Hold, dB, dBm, REL functions
- RS-232 isolated interface with application software
- IEC 1010 : 600 V CAT III

SEFRAM 7211 and 7240 can be powered by batteries or mains. These instruments can be used either for field application or for laboratory measurements. The built-in compartment make the storage of cables and accessories very easy.

Technical Specification	BK2831D	SEFRAM 7211	SEFRAM 7240
VDC	2V to 1200V (4 rges)	400mV to 1000V (5 rges)	40mV to 1000V (6 rges)
Accuracy*	±(0,05% + 5d)	±(0,1% + 2d)	±(0,06% + 8d)
VAC	2V to 1000V (4 rges)	4V to 750V (4 rges)	400 mV to 1000V (5 rges)
Accuracy*	±(0,75% + 10d)	±(0,5% + 5d)	±(0,7% + 5d)
Bandwidth	40Hz - 10KHz	40Hz - 1 KHz	40Hz - 100KHz
VAC + DC	-	-	400mV to 750V (5 rges)
Accuracy*	-	-	±(0,7% + 5d)
IDC	2mA to 20A (5 rges)	4 mA to 10A (4 rges)	40mA to 10A (4 rges)
Accuracy*	±(0,75% + 5d)	±(0,4% + 2d)	±(0,2% + 4d)
IAC	2mA to 20A (5 rges)	4 mA to 10A (4 rges)	40 mA to 10A (4 rges)
Resistance	2KΩ to 20MΩ (5 rges)	400 Ω to 40 MΩ	400Ω to 40 MΩ
Accuracy*	±(0,2% + 5d)	±(0,4% + 2d)	±(0,3% + 2d)
Continuity test	yes	yes	yes
Diode test	yes	yes	yes
Frequency	20Hz 200KHz (2 rges)	100Hz to 1MHz (5 rges)	400Hz to 4MHz (5 rges)
TRMS	TRMS AC	TRMS AC	TRMS AC+DC
Capacitance	-	4 nF to 40 μF (5 rges)	4 nF to 10mF (5 rges)
Temperature	-	-	- 50°C to + 1200°C
Memory	-	yes	Yes, 10
Peak-hold	-	yes	yes
Relative mode	-	yes	yes
Other functions	-	Hold	dB, dBm, Min-Max, auto-hold
RS-232 interface	-	-	yes, optoisolated
General Specification			
Bargraph	-	42 segments	80 segments
Display	LED, 20 000 counts	LCD, 4000 counts	LCD, triple display 40 000 counts
Measurement rate	2 mes/s	2 mes/s	2 mes/s
Backlight	-	yes	yes
IEC 1010	600V CAT II	600V CAT III	600V - CAT III
Power supply	115/230V	Battery / mains	Battery / mains
Dimensions, weight	240 x 90 x 270mm, 2,1Kg	218 x 195 x 73 mm, 1,3kg	230 x 250 x 95 mm, 1,7Kg

Accuracy values are basic accuracy. For 7240, accuracy is specified in 4000 counts mode. It is necessary to multiply by 10 the specifications for 40000 counts accuracy.

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

BENCH MULTIMETERS



BK 5491A

Capabilities

- 50000 counts, dual display
- True RMS AC, AC+DC
- Basic accuracy 0,02% for VDC
- Frequency meter up to 500KHz
- dBm measurements
- RS-232 interface
- IEC 1010 : 600 V CAT II



BK 5492

Capabilities

- Selectable 120000/40000/4000 counts
- Dual display
- True RMS AC, AC+DC
- Selectable measurement rates
- 2 or 4 wires resistance measurements
- IEEE interface (option)
- IEC 1010 : 600 V CAT II

These two high resolution benchtop multimeters are designed to be used in any high school, technical trade school, university, R&D department, service, maintenance, test and manufacturing, with high performances at a low price.

Technical Specification	BK 5491A	BK 5492
VDC	500 mV to 1000 V (5 rges)	120 mV to 1000 V (5 rges)
Accuracy*	± (0,02% + 4d)	± (0,012% + 5d)
VAC	500 mV to 750 V (5 rges)	120 mV to 750V (5 rges)
Accuracy*	± (0,5% + 40d)	± (0,2% + 100d)
Bandwidth	30 Hz to 100 KHz	30 Hz to 100KHz
VAC + DC	500 mV to 750 V (5 rges)	120 mV to 750 V (5 rges)
Accuracy*	± (0,05% + 50 d)	±(0,2% + 45d)
IDC	500 µA to 10 A (6 rges)	12 mA to 12 A (4 rges)
Accuracy*	±(0,05% + 5d)	± (0,05% + 15d)
IAC	500 µA to 10 A (6 rges)	12 mA to 12 A (4 rges)
Resistance	500 Ω to 50 MΩ (6 rges)	1,2 kΩ to 120 MΩ (6 rges)
Accuracy*	± (0,1% + 5d)	± (0,05% + 8d) en 4 fils
Continuity test	yes	yes
Diode test	yes	yes
Frequency	5 Hz to 500 KHz (4 rges)	5 Hz to 1 MHz (4 rges)
TRMS	TRMS AC + DC (voltage and current)	TRMS AC + DC (voltage and current)
Relative mode	yes	yes
Other functions	dBm, %, MIN, MAX, HOLD, COMP	dBm, %, MIN, MAX, HOLD, COMP
RS-232 interface	yes	yes
General Specification		
Display	VFD (vacuum)	VFD (vacuum)
Measurement rate	1 to 3 mes/s	2 to 20 mes/s
Safety	600V CAT II	600V CAT II
Power supply	100 / 120 / 220 / 240V - 50 / 60 Hz	100 / 120 / 220 / 240 V - 50 / 60 Hz
Dimensions, weight	255 x 105 x 305 mm, 3Kg	255 x 105 x 305 mm, 3Kg

OPTIONAL ACCESSORIES : RK01 : Rack Mount
BK 5492 GPIB : model with GPIB interface

OPTIONAL ACCESSORIES : SEE PAGE 54, 55, 56, 57

* All accuracies are basic accuracy

POWER SUPPLIES

Single output DC power supplies



BK 1621A-1623A-1627A

Capabilities

- LED display (red, green)
- Connect 2 supplies in series or parallel to double voltage or current
- Compact style
- Reliable, durable
- Fully overload protected



BK 1715A-1735 A

Capabilities

- LED display (red, green) with 4 digit
- 10mV and 1mA resolution
- Connect 2 supplies in series or parallel to double voltage or current
- Very low ripple and excellent regulation
- Reliable, durable
- Fully overload protected

Technical Specification	BK 1621A	BK 1623A	BK 1627A	BK 1715A	BK 1735A
Number of channels	1	1	1	1	1
Display	2 LED display red, green		2 LED display red, green		
Output voltage	0-18V	0-60V	0-30V	0-60V	0-30V
Output current	0-5A	0-1,5A	0-3A	0-2A	0-3A
	Can be connected in series or parallel				
General Specification					
Display	LED 3 Digit	LED 3 Digit	LED 3 Digit	LED 4 Digit	
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.				
Mode	Indepandant (single)				
Power supply	120 - 230VAC ± 10%, 50/60Hz				
Dimensions	205 x 115 x 270 mm	205 x 115 x 270 mm	205 x 115 x 270 mm	158 x 140 x 318 mm	
Weight	7,4 Kg	7,4 Kg	7,4 Kg	5,4 Kg	4,7 Kg
IEC 1010	Mains : CAT II Output 60V CAT I				

Supplied with one power cord

Single output DC switching power supplies

Technical Specification	BK 1665	BK 1666	BK 1667
Number of channels	1	1	1
Display	2 LED display green	2 LED display green	2 LED display green
Output voltage	1-19V	1-40V	1-60V
Output current	0-10A	0-5A	0-3,3A
Ripple and noise	<20mVrms.	<20mVrms.	<20mVrms.
Load regulation	0,5% + 200 mV	0,5% + 200 mV	0,5% +200 mV
General Specification			
Display	LED 3 Digit	LED 3 Digit	LED 3 Digit
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.		
Power supply	90-265VAC \pm 10%, 50/60Hz		
Dimensions	205 x115 x 275 mm	205 x 115 x 275 mm	205 x 115 x 275 mm
Weight	3Kg	3Kg	3Kg
IEC1010	Mains : CAT II output 60 V CAT I	Mains : CAT II output 60 V CAT I	Mains : CAT II output 60 V CAT I



BK 1665
BK 1666-BK 1667

Capabilities

- Over voltage & short circuit protection
- Fine setting for voltage and current
- Constant voltage operation
- Constant current operation

Supplied with one power cord

* All accuracies are basic accuracy

Single output DC power supplies high power



BK 1743B
BK 1745

Technical Specification	BK 1743B	BK1745
Number of channels	1	1
Display	2 LED display red, green	2 LED display red, green
Output voltage	0-35 V	0-35V
Output current	0-6A	0-10A
Ripple and noise	1mVrms. typ.	1mVrms. typ.
Load regulation	0,2%+2mV	0,2%+2mV
General Specification		
Display	LED 4 Digit	LED 4 Digit
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.	
Power supply	120-230VAC \pm 10%, 50/60Hz	
Dimensions	205 x 115 x 275mm	
Weight	10,8Kg	14,9 Kg
IEC 1010	Mains : CAT II Output 60V CAT I	

Supplied with one power cord

Capabilities

- 4 digits LED displays
- Fully overload protection
- Very low ripple and excellent regulation



Triple output power supplies



BK 1760A-1761

Capabilities

- Two 4 digit LED displays
- Switchable series / parallel operation
- 10mV and 1mA resolution



BK 1672

Capabilities

- 4 separate LED displays
- Switchable series / parallel operation
- Fully overload protection

Technical Specification	BK 1760A	BK1761	BK 1672
Number of channels	3	3	3
Display	2 LED displays green	2 LED displays green	4LED displays red, green
Output voltage	2x0-30V+1x4-6,5V	2x0-35V+1x2-6,5V	2x0-32 V+1x5V
Output current	2x0-2A+1x5A	2x0-3A+1x5A	2x0-3A+1x3A
Ripple and noise	\leq 1 mVrms.	\leq 1 mVrms.	\leq 0,3 mVrms.
Operating modes	Serial, parallel or tracking	Serial, parallel or tracking	Serial, parallel or tracking
General Specification			
Display	LED 4 digit	LED 4 digit	LED 3 digit
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.		
Power supply	120 - 230VAC \pm 10%, 50/60Hz		
Dimensions	145 x 267 x 381 mm	145 x 267 x 381 mm	170 x 230 x 310 mm
Weight	9,5 Kg	9,5 Kg	5,7 Kg
IEC 1010	Mains : CAT II Output 60V CAT I	Mains : CAT II Output 60V CAT I	Mains : CAT II Output 60V CAT I

Supplied with one power cord

* All accuracies are basic accuracy

A complete family of programmable power supplies

Capabilities

- Large easy to read LCD display
- RS 232 interface
- Data logging capability
- Over voltage protection
- Constant voltage operation
- Constant current operation
- Switching power supply



BK 1696
BK 1697
BK 1698

Technical Specification	BK1696	BK 1697	BK1698
Number of channels	1	1	1
Output voltage	1 - 20V	1 - 40V	1 - 60V
Output current	0 - 10A	0 - 5A	0 - 3A
Ripple and noise	< 25mVrms	< 25mVrms	< 25mVrms
Load regulation	0,5% + 200mV	0,5% + 200mV	0,5% + 200mV
Line regulation	50mV	50mV	50mV
General Specification			
Display	4 digit LCD display with backlight	4 digit LCD display with backlight	
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.		
Power supply		90 - 265 V 50 / 60Hz	
Interface	RS-232	RS-232	RS-232
Dimensions	98 x 193 x 215 mm	98 x 193 x 215 mm	98 x 193 x 215 mm
Weight	3Kg	3Kg	3Kg
IEC 1010	Mains : CAT II. Output 60V CATI	Mains : CAT II. Output 60V CATI	Mains : CAT II. Output 60V CATI

Supplied with one power cord.

Optional accessories RS-232 to RS-485 adapter



BK 1770



Capabilities

- Excellent programming resolution and accuracy
- Dual range outputs :
0 to 17.5V (6A) or 0 to 35V (3A)
- Integral system software makes in case calibration quick and accurate
- Large character LCD display



BK1785B
BK1786B
BK1787B
BK1788



Capabilities

- RS-232 interface
- 10mV/10mA stability resolution
- Low ripple and noise
- Excellent temperature stability
- Serial interface cable and software included

Technical Specification	BK1770	BK1785B	BK1786B	BK1787B	BK1788
Number of channels	2	1	1	1	1
Display	2 lines LCD	LED (red, green)	LED (red, green)	LED (red, green)	LED (red, green)
Output voltage	0 - 17,5V et 0-35V	0 - 18V	0 - 32V	0 - 72V	0 - 32V
Output current	0 - 6A et 0-3A	0 - 5A	0 - 3A	0 - 1,5A	0 - 6A
Ripple and noise	< 1 mVrms	< 1 mVrms	< 1 mVrms	< 1 mVrms	< 1 mVrms
Load regulation	0,001% + 1mV	0,02% + 5mV	0,02% + 5mV	0,02% + 5mV	0,02% + 5mV
Load regulation	0,001%	0,02% + 5mV	0,02% + 5mV	0,02% + 5mV	0,02% + 5mV
General Specification					
Display	LCD	LED 3 digit	LED 3 digit	LED 3 digit	LED 3 digit
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.				
Power supply	110V - 230V AC 50/60Hz	230VAC + 10% 50Hz	230VAC + 10% 50Hz	230VAC + 10% 50Hz	230VAC + 10% 50Hz
Interface	GPIO	RS-232	RS-232	RS-232	RS-232
Dimension	213 x 132 x 398 mm	213 x 132 x 398 mm	205 x 115 x 270mm	205 x 115 x 270mm	205 x 115 x 270mm
Weight	8,1 Kg	5 Kg	5 Kg	5 Kg	5 Kg
IEC 1010	Mains : CAT II Output : 60V CAT I				

Supplied with : one power cord..

* All accuracies are basic accuracy

Programmable power supplies

BK 9120, BK 9121, BK 9122, BK 9123

These power supplies are designed to meet the needs of today's applications in R&D design verification, university labs, production testing and other applications that require clean/reliable power and excellent performance. With meter resolution of 10mV and 1mA, these power supplies are ideal for low power surface mount circuits that require very precise voltage and current settings.



BK 9120 - BK 9121 - BK 9122 - BK 9123

Capabilities

- RS-232 Interface
- 10mV & 1mA Display Resolution
- Over-voltage protection and remote sensing
- Excellent regulation and very low noise
- SCPI compatible
- Fast Transient Response Time
- Closed Case Calibration
- GPIB interface for BK9123

Technical Specification	BK 9120	BK 9121	BK 9122	BK 9123
Number of channels	1	1	1	1
Output voltage	0- 30V	0- 20 V	0- 60V	0-30 V
Output current	0- 3 A	0- 5A	0- 2,5A	0-5A
VOLTAGE REGULATION				
Line regulation	≤ 0,01% + 3mV	≤ 0,01%+3mV	≤ 0,01%+3mV	≤ 0,01%+3mV
Load regulation	≤ 0,01% + 3mV	≤ 0,01%+3mV	≤ 0,01%+3mV	≤ 0,01%+3mV
Response time	≤ 50 μs	≤ 50 μs	≤ 50μs	≤ 50μs
Ripple and noise	≤ 0,5 mV & 2mVpp	≤ 0,5mV & 2mVpp	≤ 0,5mV & 2mVpp	≤ 0,5mV&5mVpp
Temperature coefficient	≤ 0,02% + 2mV/°C	≤ 0,02% + 2mV/°C	≤ 0,02% + 2mV/°C	≤ 0,02%+2mV/°C
CURRENT REGULATION				
Line regulation	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA
Ripple and noise	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA	≤ 0,01% + 250 μA
Temperature coefficient	≤ 0,01% + 1 mA/°C	≤ 0,01% + 1 mA/°C	≤ 0,01% + 1 mA/°C	≤ 0,01% + 1 mA/°C
General Specification				
Display	LCD display with backlight			
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.			
Power supply	90- 265 V 50 / 60Hz			
Interface	RS-232		GPIB + RS232	
Dimensions	98 x 193 x 215 mm			
Weight	3Kg			
IEC 1010	Mains : CAT II Output 60V CAT I			

Supplied with : one power cord



Rear panel output with fast connectors

* All accuracies are basic accuracy

High power switching power supplies

The VSP Power Supply series utilizes modern switch mode technology to produce high-power, low-noise switching supplies . All models have remote sensing capabilities to automatically maintain desired voltage levels at the load



VSP6020, 2050, 4030, 12010

Capabilities

- Provides 1.2 kilowatts
- Compact 1U rack size
- Up to nine units can be cascaded
- RS-232 interface or optional GPIB



Technical Specification	VSP6020	VSP2050	VSP4030	VSP12010
Number of channels	1	1	1	1
Output voltage	0-60V	0-20V	0-40V	0-120 V
Output current	0-20A	0-50A	0-30A	0-10 A
Ripple (10Hz to 1MHz)	≤ 10mVrms	≤ 15 mVrms	≤ 10 mVrms	≤ 20 mVrms
Noise (10Hz to 20MHz)	-	≤ 45 mVpp	≤ 45 mVpp	≤ 45 mVpp
Resolution (voltage)	20 mV	10 mV	10 mV	100 mV
Resolution (current)	10 mA	20mA	10 mA	10 mA
VOLTAGE REGULATION				
Line regulation	0,1%	0,1%	0,1%	0,1% -
Load regulation	0,1%	0,1%	0,1%	0,1%
CURRENT REGULATION				
Line regulation	0,1%	0,1%	0,1%	0,1%
Load regulation	0,1%	0,1%	0,1%	0,1%
OUTPUT SPECIFICATION				
Stability	0,05%	0,05%	0,05%	0,05%
Efficiency	80%	80%	80%	80%
Response time	250µs for load change from 40% to 90%			-
Interface	RS-232, GPIB (option)			-
General Specification				
Display	3 digit LED (red, green)			
Safety	Protected against short circuit, overload, overheat, over current and reverse polarity.			
Power supply	95 VAC - 264 VAC, 50/60 Hz			
Dimensions	483 x 44,5 x 457 mm			
Weight	6,2Kg			
IEC 1010	Mains : CAT II Output 60V CAT I			

Supplied with : one power cord

Optional accessories: GPIB interface - add GPIB to model

* All accuracies are basic accuracy

300W programmable DC electronic load



BK 8500

300W
0-120V / 0-30A

Capabilities

- Operates from 0 to 120V and 1mA to 30A
- 0,1mA and 1mV resolution (range dependent)
- 4 operating modes: CC, CV, CR, CP
- Fully protected
- RS-232 interface
- Optional USB adapter
- Connect multiple units in either parallel or series to increase power rating

Technical Specification	Voltage	Current	Power
Input	0 to 120V	1mA to 30A	300W
Operating modes	Constant current, constant voltage, constant power, constant resistance		
	Range	Accuracy	Resolution
Load regulation	0 - 18V	±(0,05% + 0,02%FS)	1mV
	0 - 120V	±(0,05% + 0,025%FS)	10mV
	0 - 3A	±(0,1% + 0,1%FS)	0,1mA
	0 - 30A	±(0,2% + 0,15%FS)	1mA
	0 - 999 ohms	±(1% + 0,3%FS)	0,001 to 0,1 ohms
	1K - 4K ohms	±(1% + 0,8%FS)	1 ohm
	0 - 100W	±(1% + 0,1%FS)	1 mW
	100 - 300W	±(1% + 0,1%FS)	10 mW
Current measurement	0 - 3A	±(0,1% + 0,1%FS)	0,1mA
	0 - 30A	±(0,2% + 0,15%FS)	1mA
Voltage measurement	1,5V to 18V	±(0,02% + 0,02%FS)	1mV
	1,5V to 120V	±(0,02% + 0,025%FS)	10mV
Battery test	Capacity test from 0 to 999A/H with test time from 0 to 60000 s		
General Specification			
Display	16 characters, fluorescent type		
Protection	overheat, over current, over voltage, overload		
Power supply	115 / 230V, 50/60Hz		
Dimensions	98 x 193 x 221 mm		

Delivered with : power cord, manual & software

Options : IT-E131 - RS-232/USB connection kit - IT-E151 : rack mounting kit

600W programmable DC electronic load



BK 8510

600W
0-120V / 0-120A

2007
NEW

Capabilities

- Operates from 0 to 120V and 1mA to 120A
- 0,1mA and 1mV resolution (range dependent)
- 4 operating modes: CC, CV, CR, CP
- Fully protected
- RS-232 interface
- optional USB adapter

Technical Specification	Voltage	Current	power
Input	0 to 120V	1mA to 120A	600W
Operating modes	Constant current, constant voltage, constant power, constant resistance		
	Range	Accuracy	Resolution
Load regulation	0 - 18V	±(0,05% + 0,02%FS)	1mV
	0 - 120V	±(0,05% + 0,025%FS)	10mV
	0 - 12A	±(0,1% + 0,1%FS)	0,1mA
	0 - 120A	±(0,2% + 0,15%FS)	1mA
Constant resistance mode	0,1 to 10 ohms	±(1% + 0,3%FS)	0,001 ohm
	10 to 99 ohms	±(1% + 0,3%FS)	0,01 ohm
	100 to 999 ohms	±(1% + 0,3%FS)	0,1 ohm
	1K - 4K ohms	±(1% + 0,8%FS)	1 ohm
Constant power mode	0 - 100W	±(1% + 0,1%FS)	1 mW
	100 - 600W	±(1% + 0,1%FS)	100 mW
Current measurement	0 - 12A	±(0,1% + 0,1%FS)	1mA
	0 - 120A	±(0,2% + 0,15%FS)	10mA
Voltage measurement	0V to 18V	±(0,02% + 0,02%FS)	1mV
	0V to 120V	±(0,02% + 0,025%FS)	10mV
Power measurement	0V to 100W	±(1% + 0,1%FS)	1mW
	100W to 600V	±(1% + 0,1%FS)	100mW
Battery test	Capacity test from 0 to 999A/H with test time from 0 to 60000 s		
General Specification			
Display	16 characters, fluorescent type		
Protection	overheat, over current, over voltage, overload		
Power supply	115 / 230V, 50/60Hz		
Dimensions	440 x 459 x 88mm		
Weight	14Kg		

Delivered with : power cord, manual & software

Options: I IT-E131 - RS-232/USB connection kit - IT-E151 : rack mounting kit

* All accuracies are basic accuracy

FUNCTION GENERATORS



2 MHz

BK 4010A

Capabilities

- 0.2 Hz to 2 MHz
- Variable duty cycle
- Variable DC offset
- 20dB attenuator
- TTL output
- VCG input



4 MHz

BK 4001A

Capabilities

- 0.5 Hz to 4 MHz
- Linear and Log sweep
- Variable duty cycle
- Variable DC offset
- 20dB attenuator
- TTL Output
- VCG input



4 MHz

BK 4003A

Capabilities

- 0.5 Hz to 4 MHz
- 5 digit LED display
- Variable duty cycle and DC offset
- 60MHz Frequency meter
- 20dB attenuator
- TTL and CMOS Output
- VCG input



5 MHz

BK 4011A

Capabilities

- 0.5 Hz to 5 MHz
- 4 digit LED display
- Variable duty cycle
- Variable DC offset
- 20dB attenuator
- TTL Output
- VCG input



5 MHz

BK 4012A

Capabilities

- 0.5 Hz to 5 MHz
- Coarse and Fine tuning
- 4 digit LED display
- Linear and log sweep
- Variable duty cycle and DC offset
- 20dB attenuator
- TTL and CMOS Output
- TTL and CMOS Output



20 MHz

BK 4040A

Capabilities

- 0.2 Hz to 20 MHz
- AM & FM modulation
- Burst operation
- External frequency counter to 30 MHz
- Linear and log sweep
- Variable duty cycle
- Variable DC offset
- 20dB attenuator
- TTL and CMOS Output

Technical Specification	BK4010A	BK4001A	BK4003A	BK4011A	BK4012A	BK 4040A
Frequency	2MHz, in 7 ranges	4MHz, in 6 ranges	4MHz, in 6 ranges	5MHz, in 8 ranges	5MHz, in 8 ranges	20 MHz, in 8 ranges
DC, sine, square, ramp	yes	yes	yes	yes	yes	yes
Counter (Max. Freq.)	-	-	60MHz	-	-	30MHz
Amplitude (50 ohm load)	10V pp	10V pp	10V pp	10V pp	10V pp	10V pp
Offset	yes	yes	yes	yes	yes	yes
Modes	-	-	-	Gate, burst, trigger	-	burst
Sweep	Ext. (VCO)	Lin, Log	Lin, Log	Ext. (VCO)	Lin, Log, Ext (VCO)	Lin, Log, Ext (VCO)
Symétrie variable	oui	-	-	yes	yes	yes
Modulation	-	-	-	-	-	AM, FM
Display	LED	-	LED	LED	LED	LED
Power supply	120V / 230V	115V / 230V	115V / 230V	115V / 230V	120V / 230V	130V / 230V
Dimensions	114 x 298 x 264 mm	90 x 275 x 300 mm	90 x 275 x 300 mm	114 x 298 x 264 mm	114 x 298 x 264mm	114 x 298 x 264 mm
Weight	1,8kg	2,5kg	2,5kg	1,8kg	1,8kg	2 kg

Supplied with : Power cord, user manual

* All accuracies are basic accuracy

Direct Digital Synthesis generators



BK 4017B

RS-232

Capabilities

- DDS (Digital Direct Synthesis) function generator
- Max frequency 10MHz
- Variable amplitude, offset and symmetry
- Lin, Log sweep
- 20dB attenuator
- External counter
- LCD display with backlight
- RS-232 interface

DDS - 10MHz

Technical Specification	BK4017B
Max frequency	10MHz, with 8 ranges
DC, sinus, square, triangle	yes
Counter (Max freq.)	100MHz, 5 digits
Amplitude (under 50 ohms)	10V pp
Offset	yes
Attenuator	20dB
Sweep	Lin, Log
Variable symmetry	yes
Modulation	external
Output	TTL / CMOS
Display	LCD, 2 lines of 16 characters
Interface	RS-232
Power supply	230V, 50/60Hz
Dimensions, weight	98 x 193 x 221mm, 2,5kg

Optional accessories : see page 56



SEFRAM 4415

2007 NEW

Capabilities

- DDS (Digital Direct Synthesis) function generator
- Max frequency 15MHz
- Variable amplitude, offset and symmetry
- 100MHz external counter
- Lin, Log sweep
- AM, FM modulation
- Gate, triggered, continuous modes
- Graphic LCD display with backlight

DDS - 15MHz

Technical Specification	SEFRAM 4415
Max frequency	15MHz, 6 digit max. display
DC, sinus, square, triangle	yes
Amplitude (under 50 ohms)	20mV to 10V pp
Offset	yes
Sweep	Lin, Log
Frequencymeter	100MHz
Variable symmetry	yes
Output	Trigger, Sync (out), Modulation (in)
Display	Graphic LCD with backlight
Power supply	230V, 50/60Hz
Dimensions, weight	213 x 210 x 88mm, 2,5kg

Optional accessories : see page 56



SEFRAM 4422

RS-232

2007 NEW

Capabilities

- DDS (Digital Direct Synthesis) function generator
- Max frequency 20MHz
- Variable amplitude, offset and symmetry
- Lin, Log sweep
- AM, FM modulation
- Burst, gate, triggered, continuous modes
- Graphic LCD display with backlight
- Arbitrary mode: 50Ms/s, 1Kpoints memory
- RS-232 interface

DDS - 20MHz

Technical Specification	SEFRAM 4422
Max frequency	20MHz, 6 digit max. display
DC, sinus, square, triangle	yes
Amplitude (under 50 ohms)	20mV to 10V pp
Offset	yes
Sweep	Lin, Log
Arbitrary mode	1000 points memory - 50Ms/s - 12 bit
Variable symmetry	yes
Modulation	AM, FM (internal, external)
Output	Trigger, Sync (out), Modulation (in)
Display	Graphic LCD with backlight
Interface	RS-232
Power supply	230V, 50/60Hz
Dimensions, weight	213 x 210 x 88mm, 2,5kg

Supplied with : Logic probe, BNC cable, power cord

Optional accessories : see page 56

* All accuracies are basic accuracy

Function / Arbitrary Generators



Generator 21,5 MHz
Sampling 80 MHz
Memory 32Kpts

RS-232

BK4070A

Capabilities

- Function generator 21,5MHz (sine, square)
- Arbitrary generator:
 - sampling rate : 40MHz
 - memory : 32Kpoints
- Vertical resolution: 12 bit
- Modulation: AM, FM, FSK, BPSK, SSB
- RS-232 interface
- Memory: up to 10 setup



Generator 31 MHz
Sampling 50 MHz
Memory 500Kpts

2007

NEW

SEFRAM 4463

IEEE-488
and RS-232

Capabilities

- Function generator 31MHz (sine, square)
- Arbitrary generator:
 - sampling rate : 50MHz
 - memory : 500Kpoints
- Vertical resolution: 12 bit
- Modulation: AM, FM, FSK, PM
- RS-232 and GPIB interface
- Memory: up to 50 setup

Technical Specification	BK4070A
Arbitrary mode :	
Vertical resolution :	12 bit
Horizontal resolution :	32 kpts
External synchronisation :	yes
External pilot input :	yes (variable)
Function generator mode :	
Resolution :	9 digit
Sinus :	0,01Hz - 21,5MHz
Square :	1Hz - 2MHz
Triangle :	1Hz - 2MHz
Pulse :	1Hz - 2MHz
Amplitude :	4mV - 10V (50 ohms)
Offset :	± 10V
Sweep :	lin., log.
Modes :	trigger, gate, burst, phase
AM modulation :	0,01Hz - 20KHz
FM modulation :	0,01Hz - 20KHz
FSK modulation :	0,01Hz - 1MHz
Other modulations :	SSB, PSK, BPSK, binaire
Special functions :	DTMF generator/detector
General Specification	
Setup memory :	10 setup
Interface :	RS-232
Display :	LCD, 2 lines of 40 char., backlight
Power supply :	100-240V - 50/60Hz / 30VA
Dimensions :	264 x 298 x 140mm
Weight :	1,6kg

Optional accessories : see page 56

Technical Specification	SEFRAM 4463
Arbitrary mode :	
Sampling rate :	50MHz
Vertical resolution :	12 bit
Horizontal resolution :	500 kpts
External synchronisation :	yes
External pilot input :	yes (10MHz)
Function generator mode :	
Resolution :	10 digit
Sinus :	10µHz - 31MHz
Square :	10µHz - 31MHz
Triangle :	10µHz - 500kHz
Pulse :	0,5mHz - 10MHz (with variable rise and fall time)
Amplitude:	10mV - 10V (50 ohms)
Offset :	±4,5V (50 ohms)
Sweep :	lin. & log. from 20ms to 500s
Modes :	trigger, gate, burst, phase
AM modulation :	0,01Hz - 20KHz
FM modulation :	0,01Hz - 20KHz
FSK modulation :	0,02Hz - 1MHz
Symmetry :	variable 20% to 80%
General Specification	
Setup memory :	50 setup
Interface :	RS-232 and IEEE-488 (GPIB)
Display :	LCD graphic, with backlight
Power supply :	85-265V - 50/60Hz / 40VA
Dimensions :	213 x 275 x 88mm
Weight :	3kg

BK4070A: The Wavegen software delivered allows the user to design specific waveforms. Afterwards, you can download directly to the memory of the generator through the RS-232 interface.

BK PRECISION



* All accuracies are basic accuracy

Generator 40 MHz
Sampling 80 MHz
Memory 1Mpts



SEFRAM 4466

IEEE-488
and RS-232

Capabilities

- Function generator 40MHz (sine, square)
- Arbitrary generator:
 - sampling rate : 80MHz
 - memory : 1Mpoints
- Vertical resolution: 14 bit
- Modulation: AM, FM, FSK, PM
- RS-232 and GPIB interface
- Memory: up to 50 setup
- SCPI programmable

Generator 50 MHz
Sampling 125 MHz
Memory 4Mpts



SEFRAM 4468

IEEE-488
and RS-232

Capabilities

- Function generator 50MHz (sine, square)
- Arbitrary generator:
 - sampling rate : 125MHz
 - memory : 4Mpoints
- Vertical resolution: 14 bit
- Modulation: AM, FM, FSK, PM
- RS-232 and GPIB interface
- Memory: up to 50 setup
- SCPI programmable

Technical Specification	SEFRAM 4466	SEFRAM 4468
ARBITRARY MODE		
Sampling rate:	80MHz	125 MHz
Vertical resolution:	14 bits	14 bits
Horizontal resolution:	1 Mpts	4 Mpts
External synchronisation:	yes	yes
External pilot input:	yes (10MHz)	yes(10 MHz)
FUNCTION GENERATOR MODE		
Resolution:	12 digits	12 digits
Sinus	1 µHz - 40MHz	1µHz - 50MHz
Square:	1 µHz - 40MHz	1µHz - 50MHz
Triangle:	1 µHz - 5 MHz	1µHz - 5MHz
Pulse:	0,5 mHz - 10 MHz	0,5mHz - 10MHz
Amplitude:	10 mV - 10V (50 Ω)	10mV - 10V (50 Ω)

Optional accessories : see page 56

Technical Specification	SEFRAM 4466	SEFRAM 4468
Offset:	± 5V	± 5V
Sweep	lin. & log.	
Modes	trigger, gate, burst, phase	
AM modulation	0,01 Hz - 20 KHz	
FM modulation	0,01 Hz - 20 KHz	
FSK modulation	0,01 Hz - 1 MHz	
Symmetry	variable 20% to 80%	
General Specification		
Setup memory	50 setup	
Interface	RS-232 and IEEE-488 (GPIB)	
Display	LCD graphic, with backlight	
Power supply	85 - 265 V - 50 / 60Hz / 40 VA	
Dimensions, Weight	213 x 275 x 88 mm, 3 kg	

SEFRAM 4468-2 : 2 channels version of 4468 (specification of each channel is the same as 4468)

WaveX software

WaveX software (under Windows™) makes the design of waveforms very easy with it's graphical interface and calculation capabilities. You can import waveform from various instruments. Afterwards you can download to the memory of the instrument through the RS-232 or GPIB interface. WaveX is delivered with SEFRAM 4463, 4466 et 4468

Selecting your arbitrary generator

Technical Specification	BK 4070A	4463	4466	4468	4468-2
Max frequency (sine, square)	21,5MHz	31MHz	40MHz	50MHz	50MHz
Sampling rate	40MHz	50MHz	80MHz	125MHz	125MHz
Memory	32K pts	500 Kpts	1M pts	4 Mpts	4 Mpts
Interface	RS-232	RS-232 and GPIB	RS-232 and GPIB	RS-232 and GPIB	RS-232 and GPIB
Channels	1	1	1	1	2

* All accuracies are basic accuracy

PULSE GENERATORS



SEFRAM 4450



SEFRAM 4452

Capabilities SEFRAM 4450/4452

- Generate pulse from 10ns to 10s
- Triggered, burst, gate operation
- Single or double pulses modes
- Delay mode
- Adjustable transition time
- GPIB interface
- SCPI programmable
- Memory up to 99 stored setups

The SEFRAM 4452 provides 2 independent outputs.
Each output has the same characteristics as SEFRAM 4450.

Technical Specification	SEFRAM 4450/4452
4450 : 1 channel - 4452 : 2 independent channels	
Function	Pulse : single or dual
Frequency	0,1Hz to 50MHz
Resolution	6 digits, 0,1ns min
Pulse width	10ns to 9,9s
Delay	0ns to 9,9s
Amplitude (50 ohm load)	
High level	-10V to +9,5V
Low level	-9,5V to +10V
Ligh level	0,5V to +9,5V
Variable transition	6 ns to 10ms
Mode	Trigger, gate, burst
External Trigger	adjustable from -9.99 to +9.99 V

General Specification	SEFRAM 4450/4452
Setup memory	99 setup
Display (4450)	LED
Display (4452)	LCD with backlight
Power supply	93 / 128 V or 186 / 256 V
Consumption (4450)	130 VA max
Consumption (4452)	150 VA max
Dimensions (4450)	213 x 275 x 88 mm
Dimensions (4452)	213 x 420 x 133 mm
Weight	3kg (4450) and 7kg (4452)

Optional accessories : see page 56

Handheld 10MHz sine/square generator



BK 3003

Capabilities

- 0.1 Hz to 9.9999999 MHz Sine/Square Wave Signal Generator
- Simultaneous Sine and Square wave generation
- 0.1 Hz Frequency resolution
- Sine Wave Output – 0 to 4.5Vp-p (no load)
- Square Wave Output – 5Vp-p (no load)
- 50 Ohm output impedance

Can be powered by a standard 9V battery or AC power adaptor

10MHz Pulse Generator



BK4030

Capabilities

- 0.1 Hz to 10 MHz
- 50 Ohm output impedance
- Pulse width adjustable from 50ns to 50ms
- 4 digit LED display
- Dimensions: 280 x 94 x 310 mm.
- Weight: 2,5kg

* All accuracies are basic accuracy

ANALOG AND DIGITAL OSCILLOSCOPES

30 MHz



BK2120B
BK 2121
BK2125A

40 MHz



BK1541D

60 MHz



BK2160A

100 MHz



BK2190B

Capabilities

- 30MHz bandwidth
- Dual or single trace operation
- 5 mV/div sensitivity
- Delayed sweep (BK2125A)
- Built in component tester (BK2125A)
- Built in Frequency Meter (BK2121)
- Compact low profile design

Capabilities

- 40MHz bandwidth
- Dual or single trace operation
- Adjustable Hold-off
- X10 magnifier
- Compact low profile design

Capabilities

- 60MHz bandwidth
- Dual or single trace operation
- Delayed sweep
- Adjustable Hold-off
- Built in Component tester
- Z axis input
- Single sweep
- Adjustable hold off

Capabilities

- 100MHz bandwidth
- Dual time base oscilloscope (2 channels)
- 5mV/division sensitivity
- X10 magnifier
- Adjustable Hold-off
- 15 kV accelerating voltage
- Channel 2 output
- Z axis input

Technical Specification	BK2120B	BK2121	BK2125A	BK1541D	BK2160A	BK2190B
Number of channels	2	2	2	2	2	2
Bandwidth (-3dB)	30MHz	30MHz	30MHz	40MHz	60MHz	100MHz
Sensitivity	5mV to 5V/div	5mV to 5V/div	5mV to 5V/div	5mV to 5V/div	5mV to 1V/div	5mV to 5V/div
Rise time	12ns	12ns	12ns	8,8ns	5,8ns	3,5ns
Input impedance	1M Ω //25pF	1M Ω //25pF	1M Ω //25pF	1M Ω //25pF	1M Ω //25pF	1M Ω //25pF
Display mode :	CH1, CH2, Dual, Chop, ADD	CH1, CH2, Dual, Chop, ADD	CH1, CH2, Dual, Chop, ADD	CH1, CH2, Dual, Chop, ADD	CH1, CH2, Dual, Chop	CH1, CH2, Dual, Chop
Sweep time	0,1 μ s to 2s/div	0,1 μ s to 2s/div	0,1 μ s to 2s/div	0,2 μ s to 0,2s/div	0,1 μ s to 2s/div	20ns to 5s/div
Expansion	X10	X10	X10	X10	X10	x10
Delayed time base	-	-	0,1ms to 0,1s/div	-	0,1 μ s to 2s/div	20ns to 0,5s/div
Source	CH1, CH2, ALT, Ext, Line	CH1, CH2, ALT, Ext, Line	CH1, CH2, ALT, Ext, Line	CH1, CH2, ALT, Ext, Line	CH1, CH2, ALT, Ext, Line	CH1, CH2, ALT, Ext, Line
Mode	Auto, Normal, TV-V, TV-H	Auto, Normal, TV-V, TV-H	Auto, Normal, TV-V, TV-H	Auto, Normal, TV-V, TV-H	Auto, Normal, TV-V, TV-H	Auto, Normal, TV-V, TV-H
Slope	+ or -	+ or -	+ or -	+ or -	+ or -	+ or -
Hold off	-	-	-	adjustable	adjustable	adjustable
XY	yes	yes	yes	yes	yes	yes
Bandwidth	DC to 1MHz	DC to 1MHz	DC to 1MHz	DC to 1MHz	DC to 1MHz	DC to 1MHz
Components tester	-	-	yes	-	yes	yes
Frequencymeter	-	yes, 50MHz	-	-	-	-
Z-axis input	-	-	-	-	yes	-
Dimensions	180 x 370 x 440 mm	180 x 370 x 440 mm	180 x 370 x 440 mm	324 x 398 x 132 mm	324 x 398 x 132 mm	324 x 398 x 132 mm
Weight	7,8 kg	7,8 kg	7,8 kg	7,6 kg	7,6 kg	8,5 kg

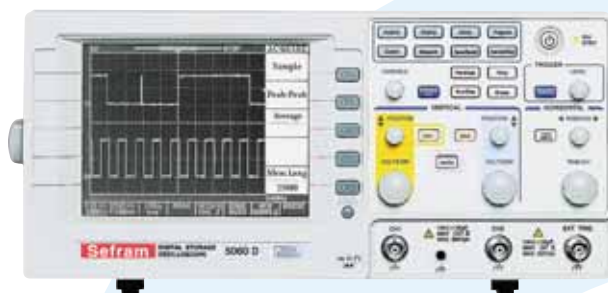
BK analog oscilloscopes are delivered with : power cord, 2 probes
See our complete range of oscilloscopes accessories : see page 54, 55, 56, 57

* All accuracies are basic accuracy

DIGITAL OSCILLOSCOPES

A complete range of DSO from 60MHz to 200MHz

60 MHz



SEFRAM 5060D

Capabilities

- **60MHz** bandwidth, 2 channels
- 8 bit vertical resolution
- 100Ms/channel & 25Gs/s ETS
- 125K memory per channel
- 15 automatic measurements
- Colour TFT LCD (5060DC)
- Detailed on-screen Help
- RS-232 and USB/Centronics interface (option)

200 MHz



SEFRAM 5260DC - 5264DC

Capabilities

- Bandwidth **200MHz**,
2 channels (5260DC)
and 4 channels (5264DC)
- 8 bit vertical resolution
- Sampling rate 1Gcs/s.
- 25K memory per channel
- 27 automatic measurements
- Color TFT LCD
- Detailed on screen help
- USB 2.0 interface



SEFRAM 5062DC - 5064DC

Capabilities

60 MHz

- Bandwidth **60MHz**,
2 channels (5062DC) and **4 channels (5064DC)**
- 8 bit vertical resolution
- Sampling rate 1Gcs/s.
- 25K memory per channel
- 27 automatic measurements
- Color TFT LCD
- Detailed on screen help
- USB 2.0 interface



SEFRAM 5160DC - 5164DC

Capabilities

100 MHz

- Bandwidth **100MHz**,
2 channels (5160DC) and **4 channels (5164DC)**
- 8 bit vertical resolution
- Sampling rate 1Gcs/s.
- 25K memory per channel
- 27 automatic measurements
- Color TFT LCD
- Detailed on screen help
- USB 2.0 interface

SEE OUR COMPLETE RANGE OF OSCILLOSCOPES ACCESSORIES PAGE : 54, 55, 56, 57

* All accuracies are basic accuracy

A complete range of 60MHz DSO

100 Ms/s
60 MHz

2 channels



SEFRAM 5060D

1Gs/s
60 MHz

2 channels



SEFRAM 5062DC

1Gs/s
60 MHz

4 channels



SEFRAM 5064DC

Capabilities

- 60MHz Bandwidth , 2 channels
- 8 bit vertical resolution
- Sampling rate 100Ms/s per channel and 25Gs/s (ETS mode)
- 125K memory per channel
- 15 automatic measurements
- B&W LCD
- Detailed on screen help
- RS-232 Interface

Capabilities

- 60MHz Bandwidth , 2 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Capabilities

- 60MHz Bandwidth , 4 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Technical Specification	5060D	5062DC	5064DC
Number of channels	2	2	4
Vertical Mode			
Bandwidth (-3dB)	60MHz	60MHz	60MHz
Resolution	8 bit	8 bit	8 bit
Sensitivity	2mV/div to 5V/div	2mV/div to 5V/div	2mV/div to 5V/div
Rise time	<6,5ns	<5,8ns	<5,8ns
Coupling	AC, DC, GND	AC, DC, GND	AC, DC, GND
Input impedance	1M ohms //22pF	1M ohms //16pF	1M ohms //16pF
Horizontal Mode			
Time base	1ns to 10s /div	1ns to 10s /div	1ns to 10s /div
Display	window, roll, XY	window, roll, XY	window, roll, XY
Acquisition			
Sampling rate	100Ms/s per channel	1Gs/s	1Gs/s
Memory (per channel)	125K words	25Kwords	25Kwords
ETS sampling rate	25Gs/s per channel	25Gs/s	25Gs/s
Mode	single, peak, average	single, peak, average	single, peak, average
Trigger			
Mode	Auto, normal, single, TV, delayed, event, pulse, edge	Auto, normal, single, TV, delayed, event, pulse, edge	Auto, normal, single, TV, delayed, event, pulse, edge
Coupling	AC, DC, LF, noise rejection	AC, DC, LF, noise rejection	AC, DC, LF, noise rejection
XY	yes	yes	yes
Automatic measurement	15 measurements, with FFT	27 measurements, with FFT	27 measurements, with FFT
Cursors	dV, dT, 1/dT	dV, dT, 1/dT	dV, dT, 1/dT
Counter	6 digit	6 digit	6 digit
Autoset	oui	yes	yes
Memory	15 setup, 2 curves	20 setup, 24 curves	20 setup, 24 curves
Autocalibration	yes	yes	yes
External Trigger	yes	yes -	yes
Help	on screen detailed help	on screen detailed help	on screen detailed help
Interfaces			
USB	USB+Centronics : option when ordering	USB HOST - 2.0	USB HOST - 2.0
RS-232	yes	yes	yes
IEEE-488	option when ordering	option when ordering	option when ordering
General Specification			
Display	LCD, B&W 320x240	TFT LCD coloured 320x234	TFT LCD coloured 320x234
Grid	8x10div or 8x12div without menu	8x10div or 8x12div without menu	8x10div or 8x12div without menu
Power supply	100 - 240V / 48-63Hz (65VA max.)	100 - 240V / 48-63Hz (65VA max.)	100 - 240V / 48-63Hz (65VA max.)
Safety	IEC1010, Cat II -300V	IEC1010, Cat II -300V	IEC1010, Cat II -300V
Dimensions, weight	254 x 142 x 310 mm - 4,1 Kg	254 x 142 x 310 mm - 4,3 Kg	254 x 142 x 310 mm - 4,3 Kg

Optional accessories : see page 54, 55, 56, 57

* All accuracies are basic accuracy

A complete range of 100MHz DSO



SEFRAM 5160DC

1Gs/s
100 MHz

2 channels



SEFRAM 5164DC

1Gs/s
100 MHz

4 channels

Capabilities

- 100MHz Bandwidth , 2 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Capabilities

- 100MHz Bandwidth , 4 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Technical Specification	5160DC	5164DC
Number of channels	2	4
Vertical Mode		
Bandwidth (-3dB)	100MHz	100MHz
Resolution	8 bit	8 bit
Sensitivity	2mV/div to 5V/div	2mV/div to 5V/div
Rise time	<3,5ns	<3,5ns
Coupling	AC, DC, GND	AC, DC, GND
Input impedance	1M ohms //16pF	1M ohms //16pF
Mode horizontal		
Time base	1ns to 10s /div	1ns to 10s /div
Display	window, roll, XY	window, roll, XY
Acquisition		
Sampling rate	1Gs/s	1Gs/s
Memory (per channel)	25Kwords	25Kwords
ETS sampling rate	25Gs/s	25Gs/s
Mode	single, peak, average	single, peak, average
Déclenchement		
Mode	Auto, normal, single, TV, delayed, event, pulse, edge	Auto, normal, single, TV, delayed, event, pulse, edge
Coupling	AC, DC, LF, noise rejection	AC, DC, LF, noise rejection
XY	yes	yes
Automatic measurement	27 measurements, with FFT	27 measurements, with FFT
Cursors	dV, dT, 1/dT	dV, dT, 1/dT
Counter	6 digit	6 digit
Autoset	yes	yes
Memory	20 setup, 24 curves	20 setup, 24 curves
Autocalibration	yes	yes
External Trigger	yes	-
Help	on screen detailed help	on screen detailed help
Interfaces		
USB	USB HOST - 2.0	USB HOST - 2.0
RS-232	yes	yes
IEEE-488	option when ordering	option when ordering
General Specification		
Display	TFT LCD coloured 320x234	TFT LCD coloured 320x234
Grid	8x10div or 8x12div without menu	8x10div or 8x12div without menu
Power supply	100 - 240V / 48-63Hz (65VA max.)	100 - 240V / 48-63Hz (65VA max.)
Safety	IEC1010, Cat II -300V	IEC1010, Cat II -300V
Dimensions, weight	254 x 142 x 310 mm - 4,3 Kg	254 x 142 x 310 mm - 4,3 Kg

Optional accessories : see page 54, 55, 56, 57

A complete range of 200MHz DSO



1Gs/s
200 MHz
2 channels

SEFRAM 5260DC



1Gs/s
200 MHz
4 channels

SEFRAM 5264DC

Capabilities

- 200MHz Bandwidth , 2 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Capabilities

- 200MHz Bandwidth , 4 channels
- 8 bit vertical resolution
- Sampling rate 1Gs/s and 25Gs/s (ETS mode)
- 25K memory per channel
- 27 automatic measurements and Go-No-Go mode
- Colour TFT LCD
- Detailed on screen help
- USB 2.0 (Host) interface and RS-232
- GPIB interface (factory option)

Technical Specification	5260DC	5264DC
Number of channels	2	4
Vertical Mode		
Bandwidth (-3dB)	200MHz	200MHz
Resolution	8 bit	8 bit
Sensitivity	2mV/div to 5V/div	2mV/div to 5V/div
Rise time	<1,75ns	<1,75ns
Coupling	AC, DC, GND	AC, DC, GND
Input impedance	1M ohms //16pF	1M ohms //16pF
Horizontal Mode		
Time base	1ns to 10s /div	1ns to 10s /div
Display	window, roll, XY	window, roll, XY
Acquisition		
Sampling rate	1Gs/s	1Gs/s
Memory (per channel)	25Kwords	25Kwords
ETS sampling rate	25Gs/s	25Gs/s
Mode	single, peak, average	single, peak, average
Trigger		
Mode	Auto, normal, single, TV, delayed, event, pulse, edge	Auto, normal, single, TV, delayed, event, pulse, edge
Coupling	AC, DC, LF, noise rejection	AC, DC, LF, noise rejection
XY	yes	yes
Automatic measurement	27 measurements, with FFT	27 measurements, with FFT
Cursors	dV, dT, 1/dT	dV, dT, 1/dT
Counter	6 digit	6 digit
Autoset	yes	yes
Memory	20 setup, 24 curves	20 setup, 24 curves
Autocalibration	yes	yes
External Trigger	yes	-
Help	on screen detailed help	on screen detailed help
Interfaces		
USB	USB HOST - 2.0	USB HOST - 2.0
RS-232	yes	yes
IEEE-488	option when ordering	option when ordering
General Specification		
Display	TFT LCD coloured 320x234	TFT LCD coloured 320x234
Grid	8x10div or 8x12div without menu	8x10div or 8x12div without menu
Power supply	100 - 240V / 48-63Hz (65VA max.)	100 - 240V / 48-63Hz (65VA max.)
Safety	IEC1010, Cat II -300V	IEC1010, Cat II -300V
Dimensions, weight	254 x 142 x 310 mm - 4,3 Kg	254 x 142 x 310 mm - 4,3 Kg

Optional accessories : see page 54, 55, 56, 57

FREQUENCY COUNTERS

[200 MHz]



BK1803D

Capabilities

- Wide Measuring range up to 200 MHz
- 7 digit LED display
- Selectable gate times 0.1 sec and 1.0 sec
- Highly accurate time base

[1 GHz]



BK1804D

Capabilities

- Wide Measuring range up to 1 GHz
- 7 Digit LED display
- Selectable gate times 0.1 and 1.0 sec.
- Highly accurate time base

[2,4GHz]



BK1823A

Capabilities

- Wide Measuring range up to 2,4GHz
- 9 Digit LED display
- Frequency ratio, Time interval, Period measurements
- Trigger function
- High stability time base
- External frequency standard input
- Input attenuator, Low pass and Line filters
- RS-232C Interface

[3,5GHz]



BK1856D

Capabilities

- Wide measuring range up to 3.5GHz
- 9 digit LED display
- Period mode for accurate low frequency measurement
- Totalize mode permits counting of individual events
- Accurate TCXO time base
- Input attenuator and filters
- RS232 Interface

Technical Specification	BK1803D	BK1804D	BK1823A	BK1856D
Frequency range	10 Hz to 25MHz 10 MHz to 200MHz	10Hz to 16 MHz 10 MHz to 1 GHz	0,1Hz to 100MHz 80MHz to 2,4GHz	0,1Hz to 100 MHz 80 MHz to 3 GHz
Accuracy	± time base+1d	± time base+1d	± time base+1dgt	± time base+1d
Period	-	-	0,5µs to 200 000µs	0,285 µs to 200 000µs
Input characteristics				
Sensitivity	< 25 mV from 5 Hz to 30MHz < 50 mV from 30 MHz to 100MHz	< 50mV from 10Hz to 200MHz	<30mV from 0,1Hz to 100MHz (A and B)	< 20mV from 5Hz to 30 MHz < 50 mV for F > 100 MHz
Impedance	1 MΩ	1 MΩ / 50 Ω (VHF input)	1MΩ (A and B)	1 MΩ
Coupling	AC	AC	AC or DC for A and B	AC
Filter	-	-	100KHz, -3dB (A and B)	100 KHz, -3dB
Attenuator	-	-	yes, x1/x10 (A and B)	yes, x1/x10
Prescaler input				
Sensibilité	-	-	<25mV from 80MHz to 150MHz <20mV from 150MHz to 2GHz <60mV from 2GHz to 2,4GHz	<15mV from 80MHz to 2GHz <20mV from 2GHz to 3GHz <30mV from 3GHz to 3,2GHz <50mV up to 3,5GHz.
Impedance	-	-	50 Ω	50 Ω
Coupling	-	-	AC	AC
Max. level	-	-	3V rms	3V rms
Time base				
Type	Quartz	Quartz	Quartz - TCO	TCXO
Frequency	10 MHz	5,24 288 MHz	10MHz	10 MHz
Stability	± 0,1ppm	± 0,1ppm	±1ppm ±1Hz	± 0,1 ppm ± 1 Hz
Temperature drift	-	-	< ± 1ppm+10% for 10% change	< ± 0,1ppm for 10% change
Main voltage drift	± 10 ppm from 0° to 50°C	± 10 ppm from 0° to 50°C	± 5 ppm from 0° to 50°C	± 10 ppm from 0° to 40°C
Display	7 digit, LED	7 digit, LED	9 digit, LED	9 digit, LED
Units	-	-	KHz, MHz, µs, gate, overflow	KHz, MHz, µs, gate, overflow
Power supply	9V DC, 300mA	7-10V DC, 800mA	120/220/240V or 6 1,5V/AA batteries	120/220/240V
Dimensions	54 x 230 157 mm	54 x 230 157 mm	90 x 270 x 240 mm	240 x 90 x 270mm
Weight	680 g	680 g	2,5Kg	2,5 kg

Supplied with : a power cord

Optional accessories : see page 56

* All accuracies are basic accuracy

ESR/LCR METERS



BK 875B



BK 878A



BK 879



BK 889A

Technical Specification	BK875B	BK878A	BK879	BK889A
Measurement frequency	120Hz / 1KHz	120Hz, 1KHz	100Hz, 120Hz, 1KHz, 10KHz	100Hz to 200KHz
Ranges:				
R	2 Ω - 20 M Ω	10 Ω - 10 M Ω	10 Ω - 10 M Ω	from 0 Ω to 500 M Ω
L	200 μ H - 200H	1mH - 10000H	1mH - 10000H	0,030 μ H - 9999H
C	200pF - 20mF	1000pF - 10mF	1000pF - 10mF	0,003pF - 80mF
Measured parameters	R, L, C, D	R, L, C, D, Q	R, L, C, D, Q	Z, Ls, Lp, Cs, Cp, DCR, D, Q, ESR, DCR
Equivalent circuit	-	-	-	yes
Accuracy (base)	1%	0,50%	0,50%	0,50%
Display	LCD	LCD	LCD, backlight	LCD, panoramic
Interface	-	RS-232	RS-232	RS-232
Power supply	9V Battery	9V Battery	9V Battery	110/230V 50/60Hz
Dimensions, weight	177 x 88 x 40 mm, 400 g	192 x 90 x 41 mm, 330 g	192 x 90 x 41 mm, 330 g	300 x 220 x 150 mm, 4,5 kg
Other function	-	Relative mode	Relative mode	600V Multimeter, 2A AC, Diode, test 2 measurement rates

Capacitance meters



BK 810 C



BK 830 A



BK 881

Technical Specification	BK810C	BK830A	BK881
Measured voltage	< 3,5 V max	< 4V max	5mVrms. 100 KHz
Ranges:	200 pF - 20 mF	200 pF - 20 μ F & 20 μ F - 200 mF	1000 pF - 10 mF
Measured parameters	C	C	ESR / DCR
Accuracy (base)	1%	0,20%	-
Display	LCD	LCD	25 LED
Power supply	9V battery	9V battery	9V battery
Dimensions, weight	76 x 171 x 57 mm, 200 g	50 x 101 x 190 mm, 454 g	40 x 100 x 145 mm , 200 g
Other function	-	-	Includes test clip for SMD Components

* All accuracies are basic accuracy

SPECTRUM ANALYSERS



50 kHz-3,3 GHz

BK2650

Capabilities

- Frequency range: 50kHz to 3,3GHz
- Channel and adjacent channel power measurement
- Occupied bandwidth measurement
- Electric field strength measurement (with optional dipole antennas)
- Magnetic field strength measurement (with optional PR 26M)
- Min/Max, Hold, Average and over write mode
- Marker measurement
- Switchable 50 or 75 ohm input impedance
- Peak search
- Auto tuning & Auto range
- Hard copy of display (with optional PT 2650)

Technical Specification

Frequency range	50 KHz to 3,3GHz
Center frequency	
Resolution	100KHz, allows numeric key or rotary wheel
Accuracy	< +(30+100T)KHz from 200KHz to 10MHz and RWB=30KHz < +(100+700T)KHz from 20MHz to 3,3GHz and RWB=100KHz (T = time base in s)
Frequency span	
Range	0Hz (zero span), 200KHz to 2GHz (1-2-5 step) and 3,3GHz (full span)
Accuracy	within +-3% +-20TKHz +-1 dot from 200KHz to 10MHz at 23°C within +-3% +-200 TKHz +-1 dot from 200KHz to 20MHz at 23°C
Display resolution	Frequency span / 250 (251 dot displayed)
Resolution bandwidth (RWB)	3dB
Range	3KHz to 3MHz (1-3 step) and auto
Accuracy	within 20%
Selectivity	1:12 (typical, 3dB:60dB)
Video bandwidth (VBW)	100KHz to 1MHz (1-3 step) and auto
SSB Phase noise	-90dBc/Hz typical (100KHz, RBW= 3KHz, VBW =100Hz, sweep time=0,3s)
Spurious response	less than -60dBc
Harmonics	less than -45dBc from 100MHz to 3,3GHz
Amplitude	
Reference level	
Range	+10 to -40dBm , 1dB step
Accuracy	within +0,8dB (RWB= 3KHz, VBW:off and 0dB attenuator)
Units	dBm, dBV, dBmV, dBμV, dBμV/m, dBμA/m (dBμV/m, dBμA/m is used in the measuring function)
Noise	-110dBm (typical) at Fc=100MHz, RBW=3KHz et VBW=100Hz
Input Impedance	50 ohms
ROS	< 2.0
Input attenuator	
Range	0 to 25dB (1dB step) coupled with reference level
Switching error	+/- 0,6dB
Display	10dB/div or 2dB/div
Accuracy	within 0,8dB/10dB +1 dot within 0,2dB/2dB + 1 dot within 1,6dB/70dB + 1 dot
Max input level	+20dBm (carrier), 25V DC

BK2650

Sweep	
Sweep time	
Range	10ms to 30s and auto, frequency span 0 to 2GHz 30ms to 30s and auto, frequency span 3,3GHz
Accuracy	+/-0,1%+1 dot from 0 to 2GHz +/-1,5%+1 dot full span
Trigger mode	Auto
Detection mode	positive peak, negative peak, sample
Functions	
Marker	Normal: displays frequency (7 digit) and level (4 digit) at marker point Delta: displays difference frequency and level between 2 markers
Peak search	Normal: searches a peak within 10div Zone: searches for a peak within a zone (centre freq. +width)
Calculation	Normal, Max, Min, Average (2 to 256)
Measure	Channel power, adjacent channel power, occupied bandwidth electrical field strength (option. antenna), magnetic field strength (option. antenna)
Auto tuning	the maximum level spectrum is adjusted to center and reference level Filters (RWB, VBW) and sweep time are adjusted to optimum
Memory	100 traces and 100 setups
General Specification	
Interface	RS-232
Hard copy	Hardcopy with optional printer
Display	backlight LCD 320x240 dots
Power supply	NiMh battery, mains adaptor included
Dimensions, weight	162 x 70 x 260mm - 1,7kg (with battery)

Optional accessories : see page 45

* All accuracies are basic accuracy

SPECTRUM ANALYSERS

A comprehensive range of accessories

Magnetic field probe



PR 26M

Technical Specification	PR26M
Frequency range	10MHz to 3 GHz
Spacial resolution	~ 0,25mm (object dependent)
Connector	SMA
Dimensions	12 x 135 mm
	2 mm x 1mm for the probe tip
Weight	20g

Coaxial adapter kit



CT2701

CT2701

Content: 6 universal adaptors, 2 BNC(m), 2 BNC(f), 1 F(m), 1 F(f), 2 N(m), 2 N(f), 1 RCA(m), 1 RCA(f), 1 SMA(m), 1 SMA(f), 2 TNC(m), 2 TNC(f), 2 UHF(m), 2 UHF(f), 1 Mini-UHF(m) and 1 Mini-UHF(f)
Supplied in a protective pouch



BK2658

Antennas



PC software



AK2650

AK 2650 software for Windows™

Kit includes Windows™ software and RS-232 cable.
Software allows user to display spectrum on computer and control the instrument from the computer (BK2650 or BK2658)

Antenna range

Technical Specification	AN301	AN302	AN303	AN304	AN305	AN306
Frequency range	0,8 to 1 GHz	1,25 to 1,65 GHz	1,7GHz to 2,2GHz	2,25GHz to 2,65GHz	390MHz to 410MHz	4,7GHz to 6,26GHz
Gain	> 1dBi	> 1dBi	> 1dBi	> 1dBi	> 1dBi	> 1dBi
VSWR	< 1,5	< 1,5	< 1,5	< 1,5	< 1,5	< 1,5
Connector	SMA	SMA	SMA	SMA	SMA	SMA
Dimensions	ø 7,5 x 250 mm	ø 7,5 x 250 mm	ø 7,5 x 180 mm	ø 7,5 x 180 mm	ø 7,5 x 250 mm	ø 7,5 x 100 mm
Weight	20g	20g	15g	15g	50g	10g

* All accuracies are basic accuracy

SPECTRUM ANALYSERS



50 kHz-8,5 GHz

BK2658

Capabilities

- Frequency range: 50kHz to 8,5GHz
- Channel and adjacent channel power measurement
- Occupied bandwidth measurement
- Electric field strength measurement (with optional dipole antennas)
- Magnetic field strength measurement (with optional PR 26M)
- Min/Max, Hold, Average and over write mode
- Marker measurement
- Switchable 50 or 75 ohm input impedance
- Peak search
- Auto tuning & Auto range
- Hard copy of display (with optional PT 2650)

BK2658 is lightweight, handheld spectrum analyser designed to analyse the “new wave” of wireless signals, including GPS, 802.11a, 3G, ultra-wideband, WiMAX, W-CDMA, CDMA, GSM, PDC, PHS, Wireless LAN and Bluetooth.

It was designed to be high-performance spectrum analyser providing excellent performance and function for many different applications

Technical Specification

frequency	
Frequency range	50KHz to 8,5GHz
Center frequency	
Resolution	100KHz, allows numeric key or rotary wheel
Accuracy	< +(30+20T)KHz from 200KHz to 10MHz and RWB=30KHz < +(30+300T)KHz from 10MHz to 8,5GHz and RWB=100KHz (T = time base in s)
Frequency span	
Range	0Hz (zero span), 200KHz to 5GHz (1-2-5 step) and 8,5GHz (full span)
Accuracy	within 3% to 23°C
Resolution bandwidth (RBW)	3dB
Range	3KHz to 3MHz (1-3 step) and auto
Accuracy	within 20%
Selectivity	1:12 (typical, 3dB:60dB)
Video bandwidth (VBW)	100KHz to 1MHz (1-3 step) and auto
SSB Phase noise	-90dBc/Hz typical (100KHz, RBW= 3KHz, VBW =100Hz, sweep time=0,3s)
Spurious response	less than -60dBc
Harmonics	less than -40dBc from 100MHz to 8GHz
Amplitude	
Reference level	
Range	+10 to -60dBm , 1dB step
Accuracy	within +0,8dB (RBW= 3KHz, VBW:off and 0dB attenuator)
Units	dBm, dBV, dBmV, dBμV, dBμV/m, dBμA/m (dBμV/m, dBμA/m is used in the measuring function)
Noise	-110dBm (typical) at Fc=100MHz, RBW=3KH
VBW=100Hz	
Input Impedance	50 ohms
ROS	< 2.0
Input attenuator	
Range	0 to 25dB (1dB step) coupled with reference level
Switching error	+/-0,6dB
Display	10dB/div or 2dB/div
Accuracy	within 0,8dB/10dB +1 dot within 0,2dB/2dB + 1 dot within 1,6dB/70dB + 1 dot
Max input level	+23dBm (carrier), 25V DC

BK2658

Sweep time	
Range	10ms to 30s and auto, frequency span 0 to 2GHz 30ms to 30s and auto, frequency span 5GHz 0,1s to 30s and auto, frequency span 8,5GHz
Accuracy	+/-0,1%+1 dot from 0 to 2GHz +/-1,5%+1 dot full span
Trigger mode	Auto
Detection mode	positive peak, negative peak, sample
Functions	
Marker	Normal: displays frequency (7 digit) and level (4 digit) at marker point Delta: displays difference frequency and level between 2 markers
Peak search	Normal: searches a peak within 10div Zone: searches for a peak within a zone (center freq. + width)
Calculation	Normal, Max, Min, Average (2 to 256)
Measure	Channel power, adjacent channel power, occupied bandwidth electrical field strength (option. antenna), magnetic field strength (option. antenna)
Auto tuning	the maximum level spectrum is adjusted to center and reference level Filters (RBW, VBW) and sweep time are adjusted to optimum
Memory	100 traces and 100 setups

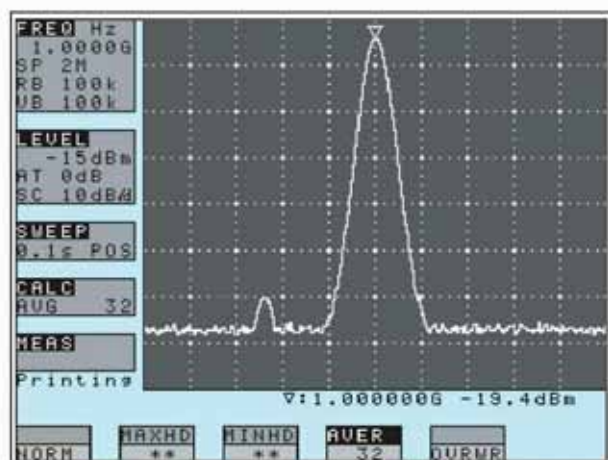
General Specification

Interface	RS-232
Hard copy	Hardcopy with optional printer
Display	LCD backlight LCD, 320x240 dots
Power supply	NiMH battery, main adaptor included
Dimensions, weight	162 x 70 x 260mm - 1,7kg (with battery)

Optional accessories : see page 45

* All accuracies are basic accuracy

Convenient functions

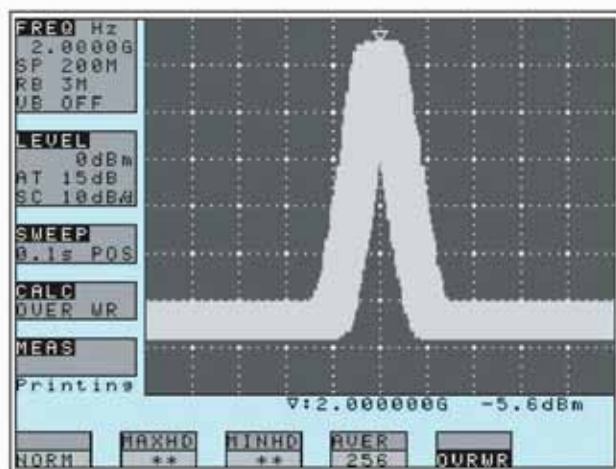


Peak function

Two different modes are available for peak search.

One is normal peak search mode to search for the peak level with all of 10div of the frequency axis as the search range, and another is in-zone peak search mode to search for the peak level in the range specified by the center value and width.

Next search (search for the next smaller level) up to 9 is permitted in the normal peak search mode. The marker moves to the peak level at each sweep in the in-zone peak search mode.

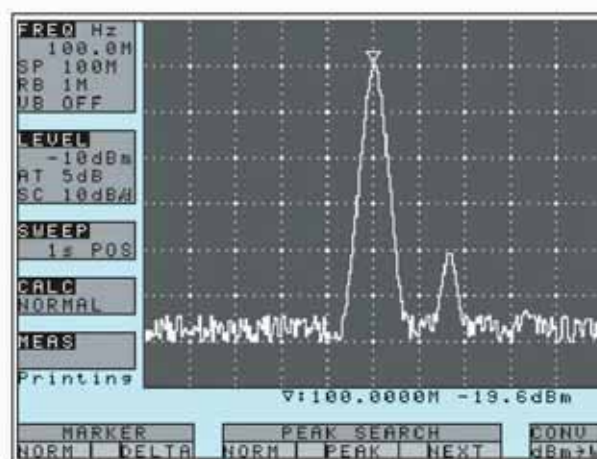


Marker function

Two different markers are available for marker measurement. One is normal marker mode to measure and display the frequency (7 digit max.) and level (3 digit max.) of the marker point, and another is delta marker mode to measure and display the frequency difference and level difference between two markers (one of which is a reference marker)

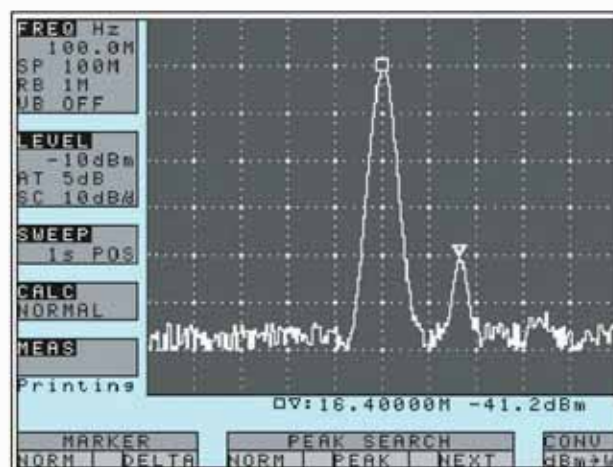
Average

Simple averaging processing is executed at each sweep. The number of times of averaging can be set from a range of 2 to 256 times by steps, which is a power of 2. The signal components buried in the noise can be measured.



Over write

The image on the screen is not cleared for each sweep, and overwriting display is executed. It is, therefore, possible to observe the process of changes in the signal.



* All accuracies are basic accuracy



FIELD STRENGTH METERS

TV meter dedicated for DVB-T



SEFRAM 7803

Capabilities

- Shockproof housing for extensive field use
- Easy to use with direct access function
- Spectrum analyser and constellation pattern included on 7803 only
- Memorization of measurements, frequency maps, programs.
- RS-232 interface.

Technical Specification	SEFRAM 7803
Frequency band	45 MHz to 865 MHz
Dynamic range	20dBμV to 120 dBμV
C/N measurement	yes
C-BER / V-BER measurement	yes
MER measurement	yes
Spectrum	yes
Constellation	yes
Measurement map	yes
Memorization	yes
Interface	RS-232
General Specification	
Display	LCD, B&W with backlight
Power supply	8 NiMH batteries / 1,2V/1,7Ah
Autonomy	3 Hours max
Dimensions, weight	170 x 160 x 95 mm, 1,1Kg

SUPPLIED WITH : 90V-250V . 50/60Hz adaptor, BNC/F adaptor. and user manual and batteries.

OPTIONAL ACCESSORIES : RS-232 Cable (P/N : 978309000)
TR7836 PC software, carrying case (SC603)

SEFRAM 7803T

Capabilities

- same as 7803
- model including remote supply

Dedicated for cable TV (DVB-C)



SEFRAM 7804

Capabilities

- Shockproof housing for extensive field use
- Easy to use with direct access function
- Spectrum analyser and constellation pattern
- Memorization of measurements frequency maps, programs.
- RS-232 interface.

Technical Specification	SEFRAM 7804
Frequency band	5 MHz to 865 MHz
Dynamic range	20dBμV to 120 dBμV
C/N measurement	yes
BER measurement	yes (QAM & C-OFDM)
MER measurement	yes (QAM & C-OFDM)
Spectrum	yes
Constellation	yes
Measurement map	yes
Memorization	yes
Interface	RS-232
General Specification	
Display	LCD, B&W with backlight
Power supply	8 NiMH batteries / 1,2V/1,7Ah
Autonomy	3 Hours max
Dimensions, weight	170 x 160 x 95 mm, 1,1Kg

SUPPLIED WITH : 90V-250V . 50/60Hz adaptor, BNC/F adaptor. and user manual and batteries.

OPTIONAL ACCESSORIES : RS-232 Cable (P/N : 978309000)
TR7836 PC software, carrying case (SC603)

SEFRAM 7804T

Capabilities

- same as 7804
- model including remote supply

* All accuracies are basic accuracy

Dedicated to satellite TV DVB-S



SEFRAM 7805

Capabilities

- Checksat mode for fast alignment of dishes
- Shockproof housing for extensive field use
- Easy to use with direct access function
- Spectrum analyser and constellation pattern
- Memorization of measurements, frequency maps, programs.
- RS-232 interface.

Technical Specification	SEFRAM 7805
Frequency band	900 MHz to 2150 MHz
Dynamic range	30dBμV to 110 dBμV
C/N measurement	yes
BER measurement	yes
MER measurement	yes
Spectrum	yes
Checksat mode	yes
Measurement map	yes
DiSEqC	yes (1.2)
Memorization	yes
Interface	RS-232
Remote supply	yes
General Specification	
Display	LCD, B&W with backlight
Power supply	8 NiMH batteries / 1,2V/1,7Ah
Autonomy	3 Hours max
Dimensions, weight	170 x 160 x 95 mm, 1,1Kg

SUPPLIED WITH : 90V-250V . 50/60Hz adaptor, BNC/F adaptor. and user manual and batteries.

OPTIONAL ACCESSORIES : RS-232 Cable (P/N : 978309000)
TR7836 PC software, carrying case (SC603)

Your ideal companion for terrestrial and satellite TV



SEFRAM 7825 STM

Capabilities

- **Light weight 3,5 kg**
- 4 hours autonomy
- Easy to use with direct access to main functions
- **Digital TV display**
- Supplied with TR7836 software

Technical Specification	SEFRAM 7825STM
Frequency band	45 MHz to 865 MHz 950 MHz to 2150 MHz
Checksat mode	yes
Dynamic range	20dBμV to 120 dBμV(terrestrial) 30dBμV to 110dBμV(satellite)
C/N measurement	yes
BER measurement	yes (C-OFDM and QPSK)
MER measurement	yes (C-OFDM and QPSK)
Spectrum	yes
Analogue TV	yes (colour)
Digital TV (MPEG-2)	yes
Measurement map	yes (colour)
Memorization	yes
Interface	RS-232
Remote supply	yes
General Specification	
Display	5 FT Colour 5 inches 320x234 pixels
Battery	12 V/5AH (Pb)
Autonomy	4 hours maxi
Dimensions, weight	185 x 165 x 290 mm, 3,5kg

SUPPLIED WITH : 90V-245V . 50/60Hz adaptor, F/BNC adaptor. TR7836 PC software and user manual.

OPTIONAL ACCESSORIES : RS-232 Cable (P/N : 978309000)

* All accuracies are basic accuracy

2.5 Kg of pure technology for the most sophisticated and compact TV meters on the market



SEFRAM 7835BM



SEFRAM 7834BM



SEFRAM 7833CM
•Only for DVB-C•



SEFRAM 7829BM

Capabilities

- Light weight 2,5 Kg
- TFT colour screen
- Easy to use with direct access push-buttons
- Display constellation pattern
- Impulse response for DVB-T
- Analog and digital TV pictures

Technical Specification	SEFRAM 7829BM	SEFRAM 7833CM	SEFRAM 7834BM	SEFRAM 7835BM
Frequency band	5 MHz to 2150MHz	5 MHz to 865MHz	5 MHz to 2150MHz	5 MHz to 2150MHz
Dynamic range (terrestrial)	20 dBμV to 120 dBμV	20 dBμV to 120 dBμV	20 dBμV to 120 dBμV	20 dBμV to 120 dBμV
Dynamic range (satellite)	30 dBμV to 110 dBμV	30 dBμV to 110 dBμV	30 dBμV to 110 dBμV	30 dBμV to 110 dBμV
C/N measurement	yes	yes	yes	yes
BER, MER measurement	QPSK & C-OFDM (calculated)	QAM	C-OFDM & QPSK	QAM-QPSK-C-OFDM
Spectrum	yes (250ms typical)	yes (250ms typical)	yes (250ms typical)	yes (250ms typical)
Constellation	yes with zoom mode	yes with zoom mode	yes with zoom mode	yes with zoom mode
OSD analog TV pictures	yes (colour)	yes (colour)	yes (colour)	yes (colour)
MPEG-2 with multi-standard socket	option*	option*	option*	option*
Video input	yes	yes	yes	yes
Measurement map	yes	yes	yes	yes
Memorization	yes	yes	yes	yes
Interface	RS232	RS232	RS232	RS232
Remote supply	yes	yes	yes	yes
General Specification				
Display	TFT Colour 5 inch 320 x 234 dots			
External power supply	100/240VAC, output 18V, 2.5 A.max			
Internal battery	NiMH DR35, 10.8V,3.5Ah			
Autonomy	3 Hours max			
Dimensions, Weight	210 x 297 x 90 mm, 2,5 Kg with battery			

SUPPLIED WITH : 90V-245V . 50/60Hz adaptor, F/BNC adaptor. TR7836 PC software and user manual.

OPTIONAL ACCESSORIES : RS-232 Cable (P/N : 978309000), car cigarette lighter adaptor 12-18V (978361000). Fast external charger unit (978363000)

TR 7836 : PC software for all sefram tv meters



Features

- Allows to create and upload (into TV meters) sites and frequency maps
- Allows to download from TV meters stored information
- Allows to create test reports
- Easy to use

OPTIONS :

- RS-232 and serial adaptor for 7825, 7829, 7834, 7835 :
P/N : 978309000
- RS-232 and serial adaptor for 7803, 7804, 7805 :
P/N : 245050609



* All accuracies are basic accuracy

Network Cable testers

Capabilities

- Auto scans thin Ethernet (BNC), 10BaseT, 100BaseTx, RJ45, 356A, TIA 568A&B, and Token Ring cables
- Detects mis-wiring, polarisation, and continuity
- Tests cables before or after installation with the remote unit
- Easy to read LED display



BK 230A



BK 231A

Capabilities

- Tests 10BaseT, 100BaseTx, 10Base2, RJ45, RJ11, 356A, TIA 568A&B, and Token Ring cables
- Detects open, short, cross, and continuity
- Tests Point to Point, rather than Pair to Pair
- Easy to read LED display

Capabilities

- Testing of twisted pair cables for open circuits, shorts, crossed pairs, reversed pairs and split pairs
- Tone generator for tracing installed cables and locating faults (use with BK262 detector)
- Shield integrity testing
- Special designed remote unit that enables one-person testing of installed cables
- Low battery LED



BK 240A

Technical Specification	BK 230 A	BK 231 A	BK 240 A
Display	LED	LED	LED
Protective holster	yes	yes	yes
Belt clip	yes	yes	yes
Power supply	9V battery	9V battery	9V battery
Dimensions	128 x 77 x 40 mm	128 x 77 x 40 mm	128 x 77 x 40 mm
Weight	172g	172g	172g



BK 262

Tone generator	BK 262
Power supply	battery 9V
Output voltage	8 V peak
Frequency	0,7 kHz to 1,4 kHz
Current	35 mA max
Dimensions	178 x 48 x 29 mm
Weight	170 g
LINE TRACER	
Distance of use	1 to 30 cm
Loudspeaker	included (mylar)
Power supply	battery 9V
Dimensions	187 X 48 X 29 mm
Weight	140 g

Capabilities

- Tone Generator: The Tone Generator is a hand held, battery powered instrument designed to perform a variety of tests on unenergized telephone lines or LAN cables.
- Cable Tracer: The Line Tracer is a hand held inductive tracer that will help to identify wires without piercing the insulation. It can trace Tone Generator signals through dry wall, wood and many other non metal surfaces. Can be used in combination with BK240A

* All accuracies are basic accuracy

PROCESS CALIBRATOR

High performance easy to use calibrator



SEFRAM 4830

Capabilities

- Voltage source $\pm 15V$
- Current source $\pm 25mA$
- Square signal generator
- 50000 counts multimeter, with simultaneous measurement
- Measure voltage, current, frequency
- Temperature measurement
- Datalogger mode
- Backlighted LCD display
- RS-232 SCPI interface
- PC software (option)



Technical Specification	SEFRAM 4830
Source mode	
Constant voltage output	
Range	$\pm 1,5V$ and $\pm 15V$
Accuracy	$\pm(0,03\% + 3d)$
Resolution	0,1mV and 1mV
Constant current source	
Range	$\pm 25mA$
Maximum load	500 ohms (12V)
Accuracy	$\pm(0,03\% + 5d)$
Resolution	1 μA
Frequency source	
Range	0,5Hz to 4800Hz
Amplitude	5, 12, $\pm 5V$ and $\pm 12V$
Pulse width variation	1/Freq*256
Memory generation	
SCAN	16 steps
Ramp	999 steps
Multimeter mode	
Display counts	50000
Measurement method	TRMS AC+DC
DCV ranges	50mV to 250V
ACV ranges	50mV to 250V
DCA ranges	50mA / 500mA
ACA ranges	50mA / 500mA
Resistance ranges	500 ohms to 50Mohms
% scale for mA	0-20mA and 4-20mA

Delivered with : test leads, protective carrying case, NiMH rechargeable batteries, main adaptor, user's manual
Delivered with : software kit including RS/USB interface

Technical Specification	SEFRAM 4830
Diode test	yes
Continuity with buzzer	yes
Frequency measurement	
Range	1Hz to 200kHz
Pulse width	0,2ms to 1999,9ms
Duty cycle	0,1% to 99,9%
Temperature (K type)	0°C compensation
Peak Hold	yes, 1ms
Datalogger	yes
General Specification	
Display	LCD, backlighted
Auto power off	off / 1 to 999 mn
Interface	RS-232, optoisolated, SCPI
Operating temperature	0°C to 40°C
Power supply	8 x 1,2 NiMH
Dimensions	54 x 90 x 192 mm
Weight	1710g
CEI1010	250V CAT II



* All accuracies are basic accuracy

PROCESS CALIBRATOR

Temperature calibrator

Capabilities

- Simulate 13 thermocouples
- mV output with 0,03% accuracy
- Simultaneous current measurement
- Transmitter simulation 0-1V / 0-100%
- DC 24V loop power (24V DC)
- MIN, MAX, Average functions
- Relative mode
- Audible alert for high/low limit
- Opto isolated RS-232 interface

Simulate 13 thermocouples

Technical Specification

Thermocouple output

Type	Range (°C)	Resolution	Accuracy
Type J	-210 ~0	0,1°	± (0,03%+1,0°C)
	0 ~1200	0,1°	± (0,03%+0,6°C)
Type K	-200 ~0	0,1°	± (0,03%+1,0°C)
	0 ~1372		± (0,03%+0,6°C)
Type E	-200 ~0	0,1°	± (0,03%+1,0°C)
	0 ~1000		± (0,03%+0,6°C)
Type T	-200 ~0	0,1°	± (0,03%+1,0°C)
	0 ~400		± (0,03%+0,6°C)
Type R	-50 ~1768	1°	± (0,03%+1,0°C)
Type S	-50 ~1768	1°	± (0,03%+1,0°C)
Type B	300 ~1820	1°	± (0,03%+2,0°C)
Type N	-200 ~0	0,1°	± (0,03%+1,5°C)
	0 ~1300	0,1°	± (0,03%+1,0°C)
Type G	0 ~2320	1°	± (0,03%+2,0°C)
Type C	0 ~2320	1°	± (0,03%+2,0°C)
Type D	0 ~2320	1°	± (0,03%+2,0°C)
Type U	-200 ~0	0,1°	± (0,03%+1,0°C)
	0 ~600	0,1°	± (0,03%+0,6°C)
Type L	-200 ~0	0,1°	± (0,03%+1,0°C)
	0 ~900	0,1°	± (0,03%+0,6°C)

Cold junction type

	Range	Resolution	Accuracy
External compensation	0 ~40°	0,1°	±(0,03%+0,9°C)
Pt385 / 1k ohms	-20 ~250°	0,1°	±(0,03%+12°C)

DCV output

	-10mV à 110mV	0,01mV	±(0,03%+3d)
	-0,1V à 1,1V	0,1mV	±(0,03%+3d)

Loop power

	100mV	0,01mV	±(0,03%+3d)
	1V	0,1mV	±(0,03%+3d)

Loop power

	24V	±10%	load> 1kohms
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DC mA measurement

	20mA	1µA	±(0,03%+3d)
	200mA	10µA	±(0,03%+3d)

Alarm output

Output voltage	3 to 24V DC
Output current	0,01mA to 3 mA

General Specification

Display	LCD, backlighted
Interface	RS-232, optoisolated, SCPI
Operating temperature	0°C to 40°C
Power supply	Battery 9V (alkaline)
Autonomy	>25 hours
Dimensions	192 x 90 x 37mm
Weight	1240g

Delivered with: , battery, pouch, test leads, user's manual



SEFRAM 4821



* All accuracies are basic accuracy

ACCESSORIES



SP 280



GE 8100



GE 8115

Current probe for oscilloscopes

TECHNICAL SPECIFICATION	SP 280
Current ranges	20 AACrms/ 30 ADC
Analog output	100 mV AC+DC/ 1 AAC+DC
Accuracy	± (1% + 2 mA)
Bandwidth	DC - 100 kHz
Jaw opening	ø 19 mm
Power supply	1 x 9 V (6F22)

Differential probes

TECHNICAL SPECIFICATION	GE 8100	GE 8115
Bandwidth	30 MHz	30 MHz
V common mode	700 V max	1500 V max
Attenuator	x 20, x 200	X 100, X 1000
Accuracy	± 3 %	± 3 %
Rise time	12 ns	12 ns
Automatic power off	10 min.	10 min.
Power supply	9V battery (autonomy : 20h) 12 V external*	9V battery (autonomy : 16h) 12 V external*
IEC 1010	CAT. III 600 V	CAT. III 1500 V
Dimensions	157 x 60 x 26 mm	157 x 60 x 26 mm
Cable length	50 cm	50 cm

* mains adaptor P/N 207195104

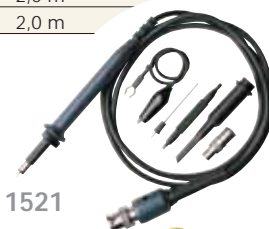
Oscilloscopes probes

P/N:	AttnInput	impedance	Bandwidth	Rise time	Vmax.	Compensation	Length
150 MHz							
GE.1501	X1	1 MΩ	45 pF	30 MHz	11 ns	600 VAC+DCmax.	1,20 m
GE.1511	X10	10 MΩ	12 pF	150 MHz	2.3 ns	600 VAC+DCmax.	1,20 m
GE.1521	X1/X10	1/10 MΩ	45 pF/12 pF	25/150 MHz	14/2.3 ns	600 VAC+DCmax.	1,20 m
GE.1502	X1	1 MΩ	65 pF	21 MHz	17 ns	600 VAC+DCmax.	2,0 m
GE.1512	X10	10 MΩ	14 pF	135 MHz	2.6 ns	600 VAC+DCmax.	2,0 m
GE.1522	X1/X10	1/10 MΩ	65 pF/14 pF	17/135 MHz	21/2.6 ns	600 VAC+DCmax.	2,0 m
250 MHz							
GE.2501	X1	1 MΩ	45 pF	55 MHz	6.4 ns	600 VAC+DCmax.	1,20 m
GE.2511	X10	10 MΩ	12 pF	250 MHz	1.4 ns	600 VAC+DCmax.	1,20 m
GE.2521	X1/X10	1/10 MΩ	45 pF/12 pF	25/250 MHz	14/1.4 ns	600 VAC+DCmax.	1,20 m
GE.2502	X1	1 MΩ	65 pF	35 MHz	10 ns	600 VAC+DCmax.	2,0 m
GE.2512	X10	10 MΩ	14 pF	190 MHz	1.8 ns	600 VAC+DCmax.	2,0 m
GE.2512	X1/X10	1/10 MΩ	65 pF/14 pF	17/190 MHz	21/1.8 ns	600 VAC+DCmax.	2,0 m
450 MHz							
GE.4511	X10	10 MΩ	7 pF	450 MHz	0.78 ns	600 VAC+DCmax.	1,20 m
GE.4512	X10	10 MΩ	8.5 pF	450 MHz	0.78 ns	600 VAC+DCmax.	1,20 m
GE.4521	X10	10 MΩ	10 pF	430 MHz	0.80 ns	600 VAC+DCmax.	2,0 m
GE.4521	X10	10 MΩ	11 pF	430 MHz	0.80 ns	600 VAC+DCmax.	2,0 m

For 3m cable length, please contact our sales department

All models can be delivered with isolated BNC (add SA to P/N) and with readout actuator for 1/10 probes (add RA to P/N)

Accessories : 109-96008 standard accessory kit (1 screw driver, 1 BNC adaptor, 1 ground lead, 1 test clip, 1 needle)



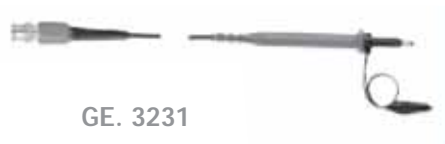
GE 1521

High voltage probes

P/N:	Attn	Imp.	Input	Bandwidth	Rise time	Comp	Length
2 kV - 200 MHz/ IEC 1010 - 2 kV CAT I/ 1 kV CAT II							
GE.3121 ⁽¹⁾	X100	100 MΩ	5.0 pF	200 MHz	1.8 ns	10-30 pF	1,20 m
GE.3231 ⁽¹⁾	X100	50 MΩ	4.0 pF	200 MHz	1.8 ns	10-30 pF	1,20 m
GE.3122 ⁽¹⁾	X100	100 MΩ	6.0 pF	160 MHz	2.2 ns	10-30 pF	2,0 m
4 kV - 100 MHz/ IEC 1010 - 4 kV CAT I/ 2 kV CAT II							
GE.34211 ⁽¹⁾	X100	50 MΩ	5.0 pF	100 MHz	3.5 ns	10-30 pF	1,20 m
30 kV - 3 MHz/ IEC 1010 - 30 kV CAT I/ 30 kV CAT III							
GE.3830	X1000	500 MΩ	3.0 pF	3 MHz			2,0 m

* GE3231 is equipped with 2 HF adjustments to improve flatness of signal

All models can be delivered with isolated BNC (add SA to P/N) and with readout actuator (add RA to P/N)



GE. 3231



GE. 3830

* All accuracies are basic accuracy



ACCESSORIES

A complete range of current transducers



SP 201- SP 205
SP 210 - SP 220 - SP 221



SP 222- SP 215
SP 230 - SP 240



SP 261



SP 270



SP 202



SP 260

Technical Specification

	Inom.	ø max.	Ratio	Output signal	Bandwidth	IEC 1010-2-032
AC CLAMPS						
SP 201	200 A	15 mm	100/1	10 mV~/ 1A~	40 Hz - 5 kHz	• (1)
SP 202	350 A	30 mm	1000/1	1 mV~/ 1A~	50 - 60 Hz	600 V, CAT. II
SP 210	200 A	15 mm	1000/1	1 mA~/ 1A~	40 Hz - 5 kHz	• (1)
SP 230	1200 A	50 mm	1000/1	1 mV~/ 1A~	40 Hz - 5 kHz	• (1)
SP 270	2000 A	70 mm	1000/1	1 mV~/ 1A~	40 Hz - 5 kHz	600 V, CAT. III
AC + DC CLAMPS						
SP 260	600 A	34 mm	100/1 & 1000/1	10 mV/A & 1 mV/A	45- 400 Hz	600 V, CAT.II
SP 261	1200 A	50 mm	1000/1	1 mV/ 1A	DC - 3 kHz	600 V, CAT.III
HIGH SENSITIVITY CLAMPS						
SP 220**	5 A	15 mm	1/1	1 V~/ 1A~	40 - 60 Hz	• (1)
SP 221**	10 A	15 mm	10/1	100 mV~/ 1A~	40 Hz - 5 kHz	• (1)
SP 222**	500 A	50 mm	1000/1	1mA~/ 1A~	40 Hz - 5 kHz	• (1)
AC + DC CLAMPS FOR OSCILLOSCOPES						
SP 280	20 AAC/ 30 ADC	19 mm	10/1	100 mVAC+DC/ 1 AAC+DC	DC - 100 kHz	300 V, CAT.III/ 600 V CAT.II
AC CLAMPS WITH DC OUTPUT (Applications : recorders, dataloggers, ...)						
SP 205	25 A	15 mm	10/1	1 VDC/ 10 A~	40 Hz - 5 kHz	• (1)
SP 215	250 A	50 mm	100/1	1 VDC/ 100A ~	40 Hz - 5 kHz	• (1)
SP 240	1200 A	50 mm	1000/1	1 mVDC/ 1A~	40 Hz - 5 kHz	• (1)

(1) for isolated conductors

** high sensitivity current transducer for leakage current measurement

Selection guide

R = Recommended
P = Possible
I = Incompatible

	1525-1530-1555	7307/7309	7310	7317/7318/7322/7324	7332-7333	7337	7345	7211	7240	BK2405A	BK2407A	BK2408	BK2703B	2704B	2706A	2707A	BK2880B/2890A	BK2831D	BK388B	BK389A	BK390A	BK391A	BK2831A
AC CURRENT TRANSDUCER																							
SP 201	I	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R	R
SP 202	I	P	P	R	P	R	R	P	R	I	R	R	I	R	R	P	R	R	R	R	R	R	R
SP 205	R	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 210	I	I	I	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 215	R	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 220	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 221	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 222	I	I	I	R	R	R	R	R	R	I	R	R	I	R	R	R	R	R	R	R	R	R	R
SP 230	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 240	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
SP 270	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
AC + DC CURRENT TRANSDUCER																							
SP 260	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 261	I	R	R	R	R	R	R	R	R	P	R	R	P	R	R	R	R	R	R	R	R	R	R
SP 280	I	I	I	I	I	P	P	P	P	I	P	P	I	P	P	P	R	P	P	P	P	P	P

Note: the measurement accuracy depends on multimeter resolution and accuracy

* All accuracies are basic accuracy

Cables and adaptors

- SI601
- GPIB/IEEE cable
- SO401
- BNC male / 2 x BNC female adaptor
- SO402
- Isolated BNC male / 2 x banana female adaptor
- SO405
- 50 ohms, 2W load (BNC)
- SO410
- BNC/BNC coaxial cable (1m, 50 ohms, black)



SO 401



SO 402



SO 405

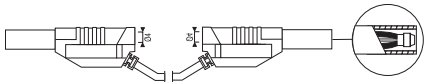


SO 410

Safety cords

P/N	PVC				Silicone		
	0,75 mm2 (12 Amax)	1 mm2 (20 Amax)	1,5 mm2 (25 Amax)	2,5 mm 2 (36 Amax)	0,75 mm2 (12 Amax)	1,5 mm2 (25 Amax)	2,5 mm2 (36 Amax)
0,10 m	2610-I-10-*	2612-I-10-*	2615-I-10-*	2617-I-10-*	2611-I-10-*	2613-I-10-*	2614-I-10-*
0,25 m	2610-I-25-*	2612-I-25-*	2615-I-25-*	2617-I-25-*	2611-I-25-*	2613-I-25-*	2614-I-25-*
0,50 m	2610-I-50-*	2612-I-50-*	2615-I-50-*	2617-I-50-*	2611-I-50-*	2613-I-50-*	2614-I-50-*
1 m	2610-I-100-*	2612-I-100-*	2615-I-100-*	2617-I-100-*	2611-I-100-*	2613-I-100-*	2614-I-100-*
1,5 m	2610-I-150-*	2612-I-150-*	2615-I-150-*	2617-I-150-*	2611-I-150-*	2613-I-150-*	2614-I-150-*
2 m	2610-I-200-*	2612-I-200-*	2615-I-200-*	2617-I-200-*	2611-I-200-*	2613-I-200-*	2614-I-200-*

Nominal voltage: 1000V - Packing: 10 pieces



*Colours
R=red, N=black
V= green, J= yellow
Bl= blue, Bc= white

Safety Test leads

- SA100
- Straight fixed banana plug test lead set
- SA101
- Right angle banana plug test lead set (4mm, red and black)
- SA105
- Patch cord set with straight fixed ban. Plug (1m red and black)
- SA106
- Right angle ban. Plug to straight fixed ban. Plug test lead set (1m red and black)
- SA110
- Alligator clip set (4mm, red and black)
- SA115
- Test probes set (4mm, red and black)
- SA120
- Maxigrabbers set (4mm, red and black)



SA 100



SA 101



SA 105



SA 106



SA 110



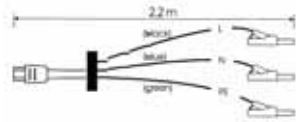
SA 115



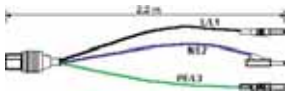
SA 120

Accessories for electrical testers

- SE702
- Test leads with ban. Plug(3) & alligator clip (3) - 2m length
- SE703
- Test main cable for UK standards - 2m length
- SE705
- Test leads with ban. Plug (3), alligator clip (3) and test probe (3)



SE 702



SE 705

Temperature accessories

- SEFRAM 7305
- Thermocouple module for multimeter or clamp-on-meter
- Ranges: -196°C to 800°C - Output: 1mVDC per °C or °F. Input :
- K type thermocouple
- Accuracy: +- (0,5%+2°C) - Supplied with a bead probe ST305
- ST301
- Immersion probe, -196°C to 800°C
- ST302
- Air probe, -196°C to 500°C
- ST303
- Surface probe, 0°C to 400°C
- ST304
- Piercing probe, -196°C to 800°C
- ST305
- Bead probe, general purpose, -40°C to 204°C
- ST306
- Thermocouple adaptor for multimeter (banana to K)
- ST309
- Bead probe, high temperature, -40°C to 500°C



ST 306



SEFRAM 7305



* All accuracies are basic accuracy

CARRYING CASES, POUCHES AND HOLSTERS



LC - 24



LC - 29B



LC - 40



LC - 210A

Selection guide	Protective case	Carrying case	Holster
Multimeters			
SEFRAM 7300	-	•	-
SEFRAM 7302	-	•	-
SEFRAM 7307/7309	-	SC 500	•
SEFRAM 7317/7319/7322/7323/7324	SC 601	SC 500	•
SEFRAM 7332 / 7333	SC 602	SC 503	•
SEFRAM 7337	-	SC 503	•
SEFRAM 7345	-	SC 503	•
BK 2405A / 2407A / 2408	-	LC - 24	-
BK 2703 B / 2704 B / 2706 A / 2707 A	-	LC - 29B	-
BK 388 B / 389 A / 390 A / 391 A	-	LC - 29B	-
Clamp-on meters			
BK 312 B / 330B / 313 A / 316	-	LC - 33	-
Electrical testers			
MW 9200 / 9300	SC 510 (for 4 products)	SC 509	457360013
Thermometers			
SEFRAM 9810	-	SC 500	•
SEFRAM 9819 / 9874 / 9885	-	SC 516	-
For all the models	SC 600 (for 6 products)	-	-
Dataloggers			
For all the models	-	LC-210 A	-
Oscilloscopes			
BK 4010 A / 4012 A / 4017 B / 4040 A	-	LC-40	-
Function generators			

- Supplied
- Incompatible



* All accuracies are basic accuracy



Product updates

Software revisions can be downloaded free from our website. Do not hesitate to visit it frequently to check for available updates. **www.sefram.fr**



Technical support

Our technical support team will provide all necessary information for getting the best performance from our products.

Please contact us : +33 4 77 59 36 97

E-mail : support@sefram.fr



Product service

Our service department can provide the best support for your products: periodic maintenance, product upgrades and repair.

Please do not hesitate to contact us for :

- periodic maintenance
- warranty extension
- traceable calibration reports
- spare parts
- repair

Please contact us: +33 4 77 59 36 91

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